DOCUMENT RESUME

ED 336 536 CE 058 881

TITLE	Economic Change and the American Workforce. State Workforce Development for a New Economic Era. Volume II.
INSTITUTION	Jobs for the Future, Inc., West Somerville, MA.
SPONS AGENCY	Employment and Training Administration (DOL), Washington, D.C.
PUB DATE	Jan 91
CONTRACT	99-9-3485-98-009-02
NOTE	150p.; For other volumes in this series, see CE 058 880-883.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	*Economic Change; *Economic Development; *Economics; Education Work Relationship; Employee Attitudes; Employer Attitudes; Futures (of Society); Government Role; Job Development; *Labor Force Development; Policy Formation; State Government; State Programs; State Surveys; *Statewide Planning; Surveys
IDENTIFIERS	Colorado; Indiana; Mississippi; Missouri

ABSTRACT

Jobs for the Future undertook a program designed to enhance the ability of four states--Colorado, Indiana, Mississippi, and Missouri--to manage economic change is described in this report. An analysis of what was happening in the state economies, especially the kinds of jobs that were being created, was carried out. The research portions of the work included the following: (1) preparation of state and substate economic, demographic, and work force skill analysis; (2) analysis of the public sector system for education and training; (3) analysis of private sector needs, concerns, and investments in education and training through surveys and field work; (4) involvement and recruitment of key constituency groups; (5) focus groups, worker surveys, and other forums for citizen input; and (6) public education about results and recommendations for action. Findings indicated that states seemed paralyzed by the far-reaching economic changes they faced. Government, business, education, and labor appeared unable to respond with the requisite speed and scale. Government's old rule of investing in traditional educational institutions did not meet the increased need to raise adults' skill levels. Employer survey data showed a gap between theory and practice. Surveyed workers were ambivalent about getting more training. A proposed new state agenda for the 1990s includes establishment of a lifelong learning system, integration of economic and human resource development, attention to scale of effect, leveraging of private sector investment, and improvement of transitions. (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED336536

CE 058781

VOLUME II

ECONOMIC CHANGE AND THE AMERICAN WORKFORCE

State Workforce Development for a New Economic Era

A REPORT TO THE UNITED STATES DEPARTMENT OF LABOR

PRESENTED BY

Jobs for the Future, Inc.
48 Grove Street
Somerville, Massachusetts 02144

JANUARY 1991

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it

☐ Minor changes have been made to improve reproduction quality

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

The material in this volume was originally prepared under Grant No. 99-9-3485-98-009-02 from the Employment and Training Administration, U.S. Department of Labor, under the authority of the Job Training Partnership Act (JTPA). Grantees undertaking such projects under Government sponsorship are encouraged to express their professional judgement. Therefore, points of view or opinions stated in this document do not necessarily represent the official position or the policy of the Department of Labor.

BEST COPY AVAILABLE

TABLE OF CONTENTS

Executive Summary i

Introduction 1

Economic Summary of the Six JFF States 26

The JFF Employer Surveys 53

The JFF Worker Surveys 68

The JFF Employer Field Interviews 79

The JFF Focus Groups 100

The JFF Regional Congresses 106

A State Agenda for the Nineties 123

Appendix: Occupational Skill Profiles

EXECUTIVE SUMMARY

Economic Change and the American Workforce

Over the past two years, Jobs for the Future undertook a unique program designed to enhance the ability of four states (Colorado, Indiana, Mississippi, and Missouri) to manage economic change. JFF analyzed what was happening in the state economies, especially the kinds of jobs that were being created, and sought ways to help the states prepare their workers by making state human development systems more responsive to the fundamental changes of today's competitive global economy. The goal was to improve the states' capacity to plan for the long term, to integrate their systems for economic and human resource development, and to accelerate the adoption of more effective policies and practices for workforce preparation.

This volume tells the story of JFF's state work. It reports the findings from extensive research and communications activities in the four states. It suggests ways that a state can successfully build economic opportunity through a stronger lifetime workforce development system.

The report is organized into nine sections.

1. Introduction
2. Economic Summary of the JFF States
3. The JFF Employer Survey
4. The JFF Worker Survey
5. The JFF Employer Field Interviews
6. The JFF Focus Groups
7. The JFF Regional Congresses
8. Conclusion: A State Agenda for the Nineties

This Executive Summary outlines key findings from each of the eight sections.

Introduction

The governance and organizational structure for each JFF program varied according to the economic and political situation in each state. Nonetheless, the strategies that JFF undertook to achieve its goals involved common activities in all four states. These included:

- providing, through *new research and conceptual models*, new insight into the education and skill needs of a state's workforce, the competitive position of employers, and the economic development opportunities of communities, sub-state regions and the state as a whole;

- developing *new collaborative working groups* of players from important sectors of a state's economy: government, labor, business, education, and community organizations;
- providing *new forums for the general public* to create and inform an action agenda;
- institutionalizing an *improved process of state planning* for economic development, education and training; and
- delivering results in the form of *new initiatives, priorities and spending* to meet identified needs.

Several guiding principles were common to all states as well:

- economic development depends on human development;
- states need to address an existing skills mismatch;
- sub-state and regional economies differ greatly and workforce preparation strategies must be targeted accordingly; and
- ordinary citizens must be involved in the process of improving a state's economy.

The Findings

Shifts in the economic landscape have affected the four states in similar ways. States are losing their 'middle ground'—the well-paid traditional blue collar jobs that used to be a safe-haven for high school graduates and dropouts alike. The mushrooming service sector is generating both high-wage, high-skill and low-wage, low-skill jobs—a shift that has contributed to a polarization of job opportunities.

These economic realities are by now familiar. But, as the JFF research shows, the ways in which they play out in different states raise fundamentally different policy challenges for state governments: from a Connecticut in which service sector growth means expansion of high value-added producer services, to a Mississippi in which growth concentrates in low-wage retail and personal services; from a Colorado in which manufacturing growth has spawned high-technology industries, to an Indiana which faces the challenge of modernizing basic industry.

Regardless of their particular economic circumstances, all the states seem to be paralyzed by the far-reaching economic changes they face. The major institutions—government, business, education, and labor—appear unable to respond with the requisite speed and scale. JFF's research has revealed some of the barriers that have impeded action by each of these sectors.

States. The JFF states spend 60-80 percent of their budgets on human resource development. The lion's share—over 90 percent—goes to traditional education: K-12 and higher education. Less than 5 percent of the total is spent on adult education or direct workforce preparation.

And yet:

- in Indiana, 400,000 skilled workers will retire by 2000, and only 75,000 young people will enter the workforce to replace them;
- in Missouri, the fastest growing part of the workforce is among workers who are between 45 and 55 years old—this workforce segment will increase by 60 percent by the year 2000;
- in Colorado, less than one in a thousand state dollars goes to adults in need of basic education. Of 400,000 functionally illiterate adults, only 5 percent were served by adult basic education programs in 1989 and only 9,000 of these 22,000 individuals completed their GED. At that rate, it will take 44 years simply to reach every citizen who is functionally illiterate today.

Clearly, the old rule—invest in traditional educational institutions—does not serve well in this new situation of increased need to raise the skill levels of working adults. Public policy must change to meet new realities.

Private Sector. One of the most striking findings in the employer survey data is a gap between theory and practice. While firms in different states were generally aware of the economic changes and their impact on labor markets and skill levels, few firms have committed themselves to action.

Employers in all states don't fully realize that the workforce challenges they face today will only intensify in the years to come. Many employers anticipate labor shortages in critical occupations and many report workforce skill deficiencies in precisely those areas that will be more important in the future workplace—communication, problem solving, and prioritizing. Yet few firms are taking the necessary steps to develop the skills that will ensure a competitive workforce for the future.

A few examples help illustrate the discrepancy between what firms think and what they do:

- Two thirds or more of employers in all states say education and training is a good or excellent investment of company resources, yet *the majority of firms interviewed spend less than $5,000 annually on education and training.*
- Employers in all four states believed that workers lacked skills in areas such as setting priorities, problem solving, and communicating effectively, yet *the majority of training in all firms revolves around job-specific skills.*
- Employers cite the greatest skill deficiencies among their semi-skilled workers, yet *the majority of training in firms in all states goes to managers and professionals.*
- Firms in all states experience considerable difficulty hiring skilled craft workers yet *few firms develop skilled workers in-house.*

- Firms are concerned about the costs of education and training, but *employers in all states utilize private training resources to a much greater extent than public training resources.*

Workers. Workers surveyed by JFF are ambivalent about getting more training and about half are not willing or able to do much to obtain training. This reflects a larger ambivalence about how training will help them. A few key findings help illustrate this ambivalence:

- Majorities of workers believed that their employers already provide more than enough training for them to do their jobs well, and that their skills and education and those of their co-workers are underutilized.
- Significant numbers—close to 50 percent—said that they would attend training only if their employers required it and only on company time.
- Many view "training" as negative, as somehow connoting failure.
- Yet those who had participated in some form of structured training over the past 5 years were positive; they want more. Indeed, over 70 percent of workers surveyed felt they needed more training in order to advance in their jobs.
- Unfortunately, workers perceive significant obstacles to their participation in training opportunities. A majority said it was not offered at a convenient time or place, 50 percent said it costs too much, 40 percent said good programs are not available, and almost two out of five workers had no time or energy for training.

Taken together, these findings suggest that employees will not respond to training opportunities without stronger motivation and help in overcoming obstacles to training.

This situation analysis adds up to the need to make major changes in the way that government, business, the education establishment, and individuals operate. Workers need to dedicate themselves to the new reality that rapid change means the need for constant upgrading in order to maintain job security. Businesses need to understand that they must adapt to a new world order based on high performance operations that require major investments in their workforce. The education sector must internalize the need to direct resources at the learning needs of the adult worker and to deliver more learning services at the work site.

Most important, the new economic paradigm affects state government because it revolutionizes the way that states govern. Now state policymakers are looking to human capital as the next frontier in economic development. They are transforming narrowly targeted, programmatic approaches in education, job training, and human services to broader, "wholesale" initiatives. They are making changes in state systems that carry the potential of reaching and changing the behavior of a greater number of individuals and firms.

State economic development for the 1990s must be viewed as an essential collaboration between the public and private sectors that focuses on preparing and maintaining highly skilled and flexible workers.

Yet state education and training systems, designed in another economic era, are not yet equipped to prepare workers for a high-skill economy. Integrating education and training policies into a single workforce preparation system that links learning with the economic goal of creating and nurturing high performance competitive firms, is today's primary state challenge.

A state's Agenda for the Nineties will need to include the following key elements:

- establishment of a lifelong learning system that will bring coherence and continuity to human investments;
- integration of economic and human resource development;
- adoption of high performance work organization founded on skilled work;
- creation of opportunities and transition mechanisms for the new, non-traditional, labor force entrants;
- scale of effect—engaging enough firms, communities, and workers to make a difference;
- leveraging of private sector investment;
- improvement of transitions: from school to work, and from work to more school; and
- narrowing of regional differences.

To be effective, this Agenda for the Nineties should be designed and implemented across many sectors of the economy, in a process that involves all the key constituencies—government, business, labor, education, and community. Information should be used to create a common ground for action. A combination of top-down and bottom-up building of constituencies creates a powerful mix of both political pressure and permission for political leaders to implement new policies.

INTRODUCTION

Jobs for the Future's Mission in the States

Jobs for the Future, Inc., (JFF) was awarded a grant by the United States Department of Labor (DoL) to undertake a unique program designed to enhance the ability of four states (Colorado, Indiana, Missouri, Mississippi) to adapt to economic change. JFF was charged with helping the states respond to the changing demands on the workforce of today's competitive, rapidly changing, knowledge- and technology-based global economy by integrating human resource and economic development policies and structures that would improve a state's capacity to plan for the long-term and to coordinate its programs and institutions.

JFF and DoL agreed that DoL's funding of its work—in partnership with state government and the private sector—would:

> *address the urgent need in the United States for better long-range economic development planning and coordinated application of economic development, education, and training resources at the state level. This need is due to the rapid changes occurring in all facets of state economies, from the types of technology used in the workplace to the levels of international competition.*

DoL's hypothesis, supported by the success of similar Jobs for the Future's work in Arkansas and Connecticut, was that a neutral, outside third party could be helpful in convening representatives from business, labor, government, education, and community organizations in ways that were not happening internally in the states. The idea was to help states adapt to a changing world economy.

Another hypothesis was that economic development and growth depend most fundamentally on workforce skill development through education, training and re-training, and that states were ill-equipped to meet the challenge of assuring the capabilities of the current and future workforce.

The strategies to accomplish this broad mandate, JFF and DoL agreed, would involve JFF in several key activities:

- provide through new research and conceptual models, new insight into the education and skill needs of a state's workforce, the competitive position of employers, and the economic development opportunities of communities, sub-state regions, and the state as a whole;
- develop new collaborative working groups of players from important sectors of a state's economy: government, business, labor, education, and community-organizations;
- provide new forums for the general public to create and inform an action agenda;

- institutionalize an improved process of state planning for economic development, education, and training; and
- deliver results in the form of new initiatives, priorities, and spending to meet identified needs and produce lessons, transferable techniques, and programs for other states;

Jobs for the Future's State Programs

The structure, procedures, and peculiarities of each state program required the development of common outlines, guiding principles for intervention, and key activities. These elements were critical to the success of each of JFF's state initiatives.

1. **Structure of the JFF program.**

- In Colorado, ***Jobs for Colorado's Future*** was constituted as an independent organization governed by a six-member executive board comprised of two cabinet-level officials, the director of the Colorado Governor's Job Training Office, the chief executive officer of the largest employer in the state, the chair of the Education Committee of the Colorado Senate, and the chairman of Jobs for the Future, Inc. In addition, the program worked with a thirty-member advisory council, appointed by Governor Roy Romer, which reviewed the research, communications, and implementation work. The council membership represented business, labor, education, state and local government, community groups and advocacy organizations. JCF employed a full-time state director and one support staff.
- ***Jobs for Missouri's Future*** proceeded under the direction of an advisory board appointed by Governor John Ashcroft. The fifteen members of the JMF board represented legislative, labor, education, and private sectors. The work proceeded in partnership with the Missouri Department of Economic Development and the Division of Employment Security. For the first year of the program, JFF employed an in-state executive director who worked out of the offices of the Missouri Division of Job Development and Training.
- In ***Mississippi***, JFF staffed the work of the Special Task Force on Economic Development Planning, a new organization created by the Mississippi Legislature charged with the responsibility of preparing a long-term strategy for economic growth. JFF was asked to supervise the work of the forty-member, multi-sector Task Force looking at issues of development finance, infrastructure, and community economic development in addition to workforce preparation. JFF worked with a variety of state agencies and agency staff assigned from the governor's office.
- In Indiana, JFF assisted the newly-created Indiana Commission on Vocational and Technical Education. The Commission was responsible for developing a strategic plan for Indiana's vocational workforce training system. As part of this effort, JFF

performed a one-year *Jobs for Indiana's Future* program combining research and communications activities to inform the work of the Commission and increase the visibility of workforce issues in the discourse of state economic development.

In each of the four states, JFF developed a similar workplan—refined by the learning process that occurred as JFF progressed from one state to the next. The research portions of JFF's work generally included the preparation of state and sub-state economic, demographic, and workforce skill analysis; analysis of the public sector system for education and training; analysis of private sector needs, concerns, and investments in education and training through surveys and field work; involvement and recruitment of key constituency groups; focus groups, worker surveys, and other forums for citizen input; and public education about research results and recommendations for action.

2. Guiding Principles. DoL provided JFF with general strategic guidance, which was made operational through detailed workplans developed for each state. The workplans were informed by a sense of what needed to be examined and what needed to happen in the states—a sense derived from already existent public and private sector research and policy development efforts in each state, as well as from the knowledge of the members of JFF state advisory boards.

Several common principles introduced in each state appeared to have a powerful impact on state participants and on the ultimate success of the JFF programs. These principles include:

- *Economic development depends on human development.* To be improved, the human investment effort must be seen *as a whole system for lifelong learning,* not as disaggregated pieces (*e.g.,* public *and* private, kindergarten through 12th grade, higher education, *and* workforce retraining). JFF broadened the view of what states needed to focus on and, in doing so, expanded their notions of the possibilities of an integrated workforce development system in each state. One common feature of the JFF research was the preparation of simple graphics that represented the level of need within a state. **Figure One**, for example, depicts one state's population according to how it is distributed among the major programs or institutions that together make up the 'learning system.'
- *An existing skills mismatch needs to be addressed*—that is, the gap between the skills firms need and the skills existent in the labor market, a gap virtually hidden beneath the standard economic and employment data. Awareness of the "hidden" skills gap led JFF to a detailed examination of private-sector skill needs that often provided the most interesting and useful information for state participants.
- *Sub-state and regional economies differ greatly,* and workforce skill needs must be understood and met in the labor market. JFF examined regional information in each state in detail. JFF also developed local and regional forums for improving the state's workforce development system and economy.

- *Ordinary citizens must be involved in the process of improving a state's economy* and be informed about how they can work to improve the workforce development system and their own prospects.

Using these common principles, it was possible to address the particular characteristics of each state in an effective and coherent way.

JFF painted the picture as a whole.

The efforts to look at disconnected pieces of the workforce development system, and to show if and how they relate and/or miss important challenges, were an integral part of the review process and produced many revelations—particularly for state bureaucracies.

Particular pieces of research developed and supported this general conceptual framework. For example: assessment of the total level of state spending and investment in education, training, and support services for different target populations from cradle to grave clarified (a) the implications of demographic trends; (b) the education and skill needs of target populations; and (c) pointed out where investments were clearly lacking.

JFF clarified challenges states face by preparing something as simple as a map of every state and local bureaucracy that was a piece of the human investment puzzle. The map helped people in the system see it as a whole. JFF helped states realize that looking comprehensively at a state's human investment system can reveal pieces that are missing or require greater attention. Figure Two presents the institutional map that JFF created for the Jobs for Missouri's Future program. Similar 'pictures' were prepared for other states.

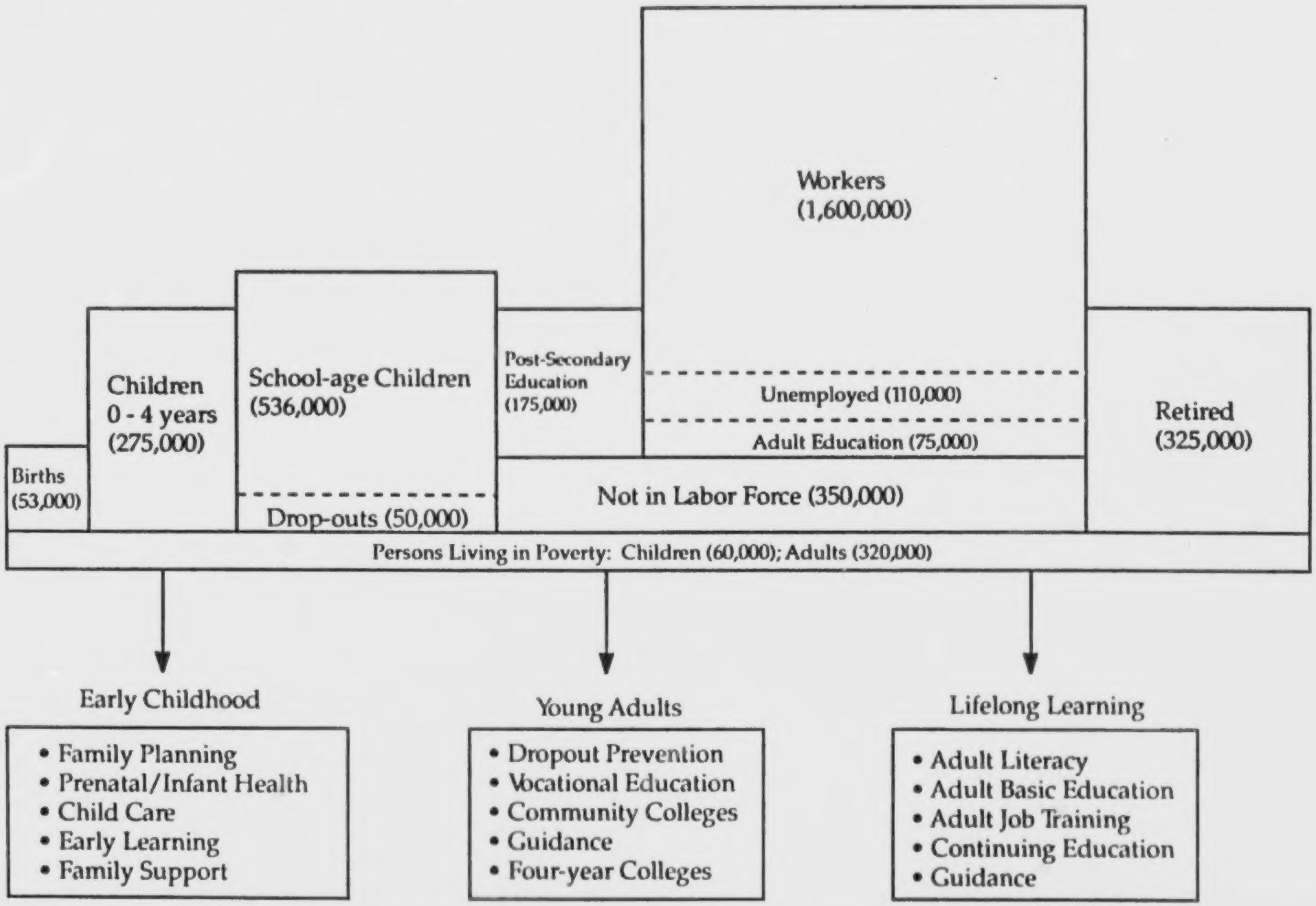
The private sector—to whom the myriad of state programs and institutions for workforce development often seem an incomprehensible blur—also responded positively to this holistic assessment of the state system. In particular, the research illuminated the limited scope, reach, and perceived competence of public sector education and training efforts in the face of tremendous need. This information prompted, in time, private sector participants to want to "do something." In the case of the four states, knowledge facilitated action.

JFF is clearly not the first organization to spot the need for states to unify the scattered pieces of the workforce development system in order to assess and improve the system as a whole. But in the four states, these efforts were just beginning, and a neutral, outside observer dramatically facilitated the process.

JFF introduced a private sector perspective to the discussion of workforce skills.

Driven in part by a need to explore the "skills mismatch" and in part by a commitment to develop effective public-private partnerships, JFF undertook an ambitious research plan involving employers, both large and small. This work provided quantitative and qualitative assessments of what was wrong and what was needed in the states' workforce development systems from the perspective of employers. It also provided quantifiable measures of employers' commitments to education, and training and retraining, and their assessments of public efforts in these areas.

The Colorado Population: Human Service Needs


Workers (1,600,000)
Children 0 - 4 years (275,000)
School-age Children (536,000)
Post-Secondary Education (175,000)
Unemployed (110,000)
Adult Education (75,000)
Retired (325,000)
Births (53,000)
Not in Labor Force (350,000)
Drop-outs (50,000)
Persons Living in Poverty: Children (60,000); Adults (320,000)

Early Childhood

- Family Planning
- Prenatal/Infant Health
- Child Care
- Early Learning
- Family Support

Young Adults

- Dropout Prevention
- Vocational Education
- Community Colleges
- Guidance
- Four-year Colleges

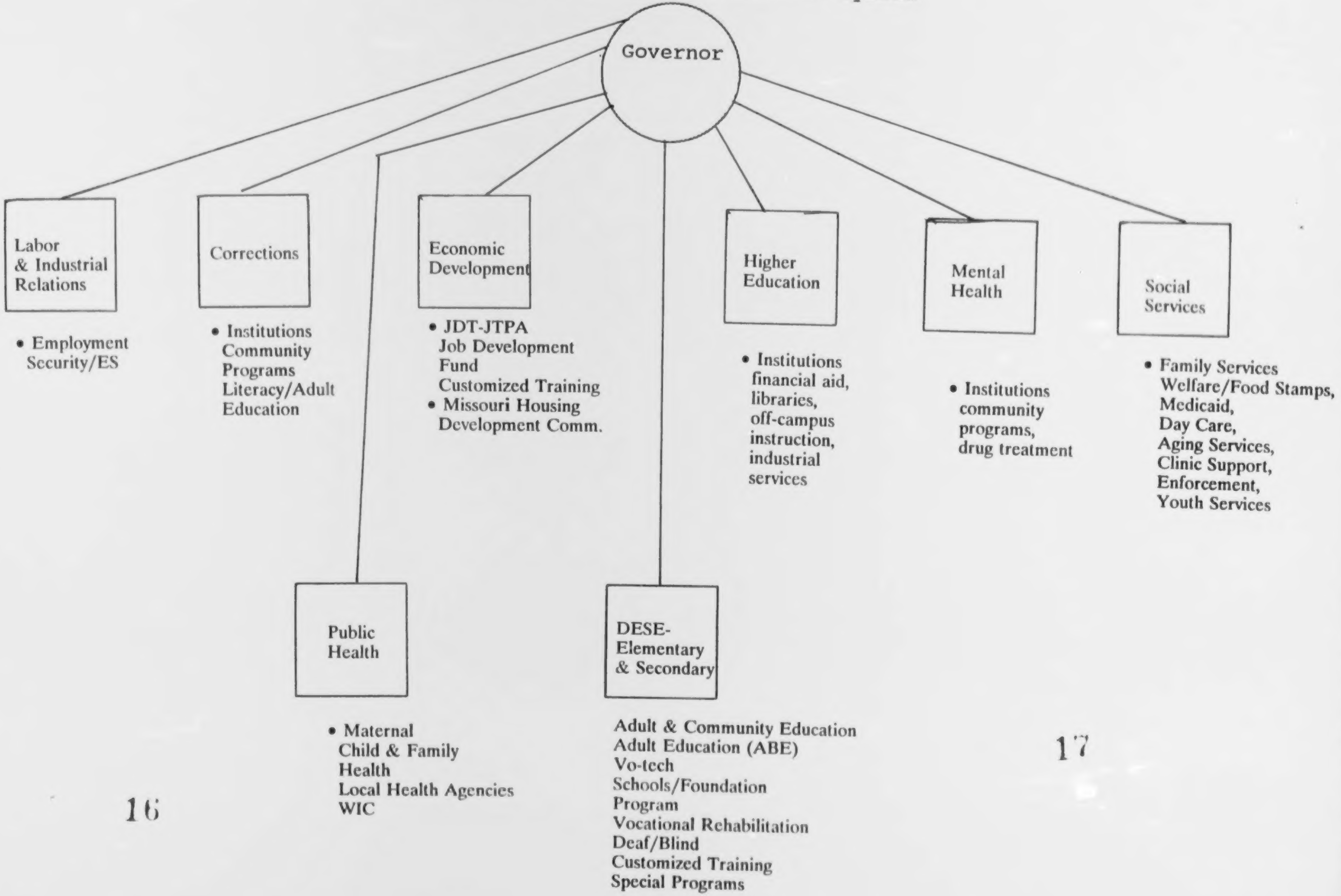
Lifelong Learning

- Adult Literacy
- Adult Basic Education
- Adult Job Training
- Continuing Education
- Guidance

Figure One

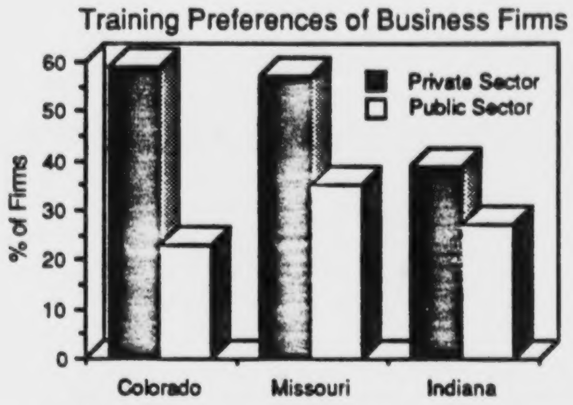
Figure 2

Missouri State Human Investment System


Governor
Labor & Industrial Relations
• Employment Security/ES
Corrections
• Institutions Community Programs Literacy/Adult Education
Economic Development
• JDT-JTPA Job Development Fund Customized Training
• Missouri Housing Development Comm.
Higher Education
• Institutions financial aid, libraries, off-campus instruction, industrial services
Mental Health
• Institutions community programs, drug treatment
Social Services
• Family Services Welfare/Food Stamps, Medicaid, Day Care, Aging Services, Clinic Support, Enforcement, Youth Services
Public Health
• Maternal Child & Family Health Local Health Agencies WIC
DESE-Elementary & Secondary
Adult & Community Education
Adult Education (ABE)
Vo-tech
Schools/Foundation Program
Vocational Rehabilitation
Deaf/Blind
Customized Training
Special Programs

This research proved particularly provocative, both in "discovering" a profound skills mismatch—even in the most economically disadvantaged states like Mississippi—and in providing key private sector data and input to close the gap. Nothing could galvanize attention around an issue like an objective survey of private employers. The surveys and field work also revealed just how slow most private sector firms were in meeting their own competitive challenges of upgrading the skills of their workers. Furthermore, they generated new assessments of the potential of both public and private sectors to meet the challenge of improving the workforce.

Figure Three



Source: Jobs For the Future Employer Surveys - Colorado, Missouri, Indiana

Employers generally had a far different perspective of the workforce development system than public providers of education and training. Our research shows that employers neither use the public system extensively (see **Figure Three**), trust it to meet their needs, nor really know much about it—preferring to rely on in-house or private training and education methods. Employers want help in dealing with the increasing strains of upgrading the workforce and improving the educational system that produces the workforce of the future, but do not know how to get help. At the same time, such employers consistently are slow to invest company resources in training their own workforce.

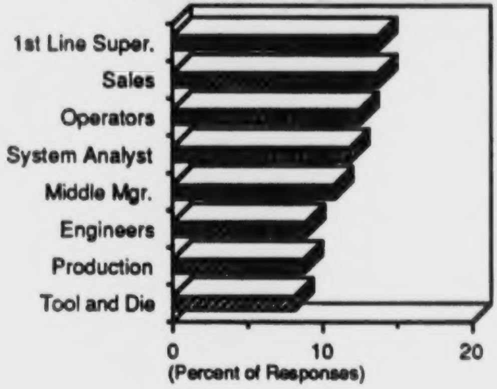
Our analysis demonstrated both a tremendous potential for tapping private sector resources and energy to improve the system, as well as dramatic problems that must be overcome. By focusing so much of its energy on private sector needs and current activities, JFF's work helped shift the debate toward the demands of today's workplace and away from traditional issues of public sector supply and management of education and training.

This information and a shift in perspective supported by data from employer surveys that assessed training needs and practice activated many participants, including political leaders, around the need for change and the direction that change had to take.

For example, employer surveys and interviews in Indiana revealed a strategic need for training that the public training system was not meeting. JFF's work showed that the implementation of new production technologies and new methods of organizing work in manufacturing plants was creating new needs. For example, the greatest stress among employers was centered on the new skill requirements among first line supervisors and sales representatives (see **Figure Four**) as decision-making moves farther down into a firm's hierarchy.

Figure Four

Jobs Where Skill Deficiencies
Threaten Business Profitability--Indiana



Source: Jobs For the Future Employer Survey - Indiana

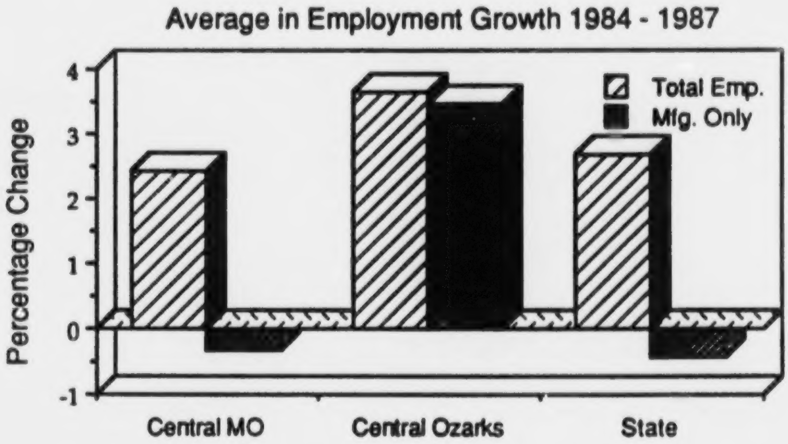
Sales personnel today are really engaged in market research for product development, not just responsible for selling from a company's current product line. Yet neither of these shifts in the skill needs of critical occupations had been detected or addressed by the public training resources.

JFF introduced a discussion of regional economies.

Analyses of demographic, economic, and skill needs on regional and local bases proved to be another powerful tool for crafting effective workforce preparation strategies at a local level.

In the four states, some degree of research and analysis similar to JFF's work had been done, at a state-level or along the lines of often arbitrary and conflicting regional and local boundaries drawn by service delivery area, county governments, and the like. JFF suggested that regional and local economies be defined by their natural economic, geographic, and cultural boundaries, and that meaningful improvement would occur when private and public sector institutions and programs began to work together. An example is **Figure Five**—the term 'SDA 5&9' doesn't mean anything to the average Missourian, but they do approximate natural regions referred to locally as the 'Central Ozarks' and 'Central Missouri'—Presenting data in this way made it more user-friendly.

Figure Five



Source: Jobs For Missouri's Future, Regional Congress Fact Book

Just as at the state level "painting a whole picture" of the system and providing new data about it proved a powerful impetus to action, the same results occurred at the regional and community level through using data in a way citizens and practitioners in the field could understand. Participants in JFF's regional meetings, organized to cut across traditional bureaucratic lines, began to see themselves and their firm or organization as part of a regional economy and community and were inspired to work together in new ways.

JFF brought the voice of the people to state discussions of economic development and workforce improvement.

Finally, JFF entered each state with a commitment to inform and engage individuals in their own efforts to improve themselves and their economic position. This commitment on the part of JFF has resulted in key tangible assets in its ability to focus attention and push action on state economic and workforce issues.

The simplest—and most powerful—mechanism for involving the public were focus groups organized in all four states. These discussions with ordinary citizens emphasized the constraints and opportunities they faced in improving themselves, their communities, and their state. These groups provided the language for the discourse on workforce and economic development and a guide to the concerns and motivations of ordinary citizens that would have to be addressed for any plans to materialize. The findings were eagerly digested and internalized by the governor and the administration, legislators, and the advisory board or task force supervising the JFF project.

While the focus groups were the most powerful tool for involving the public, other efforts also aided this process and resulted in better policy prescriptions as well. Worker surveys, public service announcements on television, community workshops, and targeted public education campaigns have enhanced JFF's strategic position by adding new dimensions to and highlighting the potential of its work in the eyes of state participants.

JFF built a multi-sector constituency.

In each of the four states, JFF sought broad input and ownership by reaching out to involve key business people and associations, advocacy and interest groups, and others with a stake in its work. These tangible steps to build constituencies for change proved to be one of the most effective means for speeding action along the lines DoL first envisioned. Such an approach afforded state leadership a simple but seemingly oft-neglected opportunity to promote improvements in their workforce and the economy.

In many ways, the single most powerful multi-sector constituency-building mechanism was the regional and community meetings. While the format and means of organizing them varied from instructive (a JFF-led discussion of changes in the economy and workforce affecting a region) to extractive (listening to participants' concerns and priorities), and from an RFP process for interested communities to targeted and active recruitment, the principle was the same: foster broad multi-sector, cross-jurisdictional participation in meeting the complex challenges of today's economy.

In Mississippi, the Regional Congresses (as they were called) were sessions at which local leaders identified major needs and constraints concerning economic development, and identified prospective remedies at both the state and local levels. JFF trained state employees as discussion leaders. The most important results were not the specific problems identified and solutions proposed—although these did inform the work—but the creation of an audience that expected something to happen, and expected to be a part of it. A second round of Regional Congresses were held to discuss and plan implementation of JFF's final report. Apparently, the governor's office would not have conceived of the congresses as a way to "do" economic development—but once in motion found it an extremely valuable technique to push economic development issues forward.

A similar result emerged in Indiana, where regional meetings were convened at which the governor and state officials discussed first-hand ways of meeting the workforce challenges identified in the Jobs for Indiana Future's Report, a special research report on workforce issues conducted for the Indiana Council on Vocational-Technical Education.

Similar results occurred in other states. In essence, JFF did nothing in these regional forums that a governor, public-private partnership, or private sector task force could not do on its own. But it demonstrated—at least to those partners in the states who had not seen this type of effort before—how developing a constituency that feels integral to change is essential to creating change and how to ingrain this idea into policy efforts in the state.

JFF's constituency-building efforts distinguish it from exclusively top-down efforts at improving the state "system" for workforce development, because they act on the premise that complementary "bottom-up" initiatives are required. Political leaders especially recognize the benefits of this strategy. A governor armed with the demands of constituents at the local level can suggest more easily that something different needs to happen, especially within the bureaucracies he or she controls. Well-articulated challenges at the local level are essential for effective change to occur at the state level.

Results in Four States

The strategy outlined above has clearly been effective in developing and facilitating a process that opens new horizons for state economic development and sets new priorities for a variety of public and private sector leaders.

When originally proposed, the two-year plan entailed one year of research and analysis followed by a second year of action and implementation. In reality, the typical timetable worked differently: first year research, analysis and ownership-building; second year communication and translation of new priorities and recommendations to workable legislative, administrative, and community and private sector actions.

The cycles of state planning, legislation, and elections have helped to dictate some of the timing—a good recommendation after year one requires additional legwork to develop into a legislative proposal for the start of the next year's legislative session.

JFF is in remarkably similar position after two years in three of the states: a new and enthusiastically received roadmap for economic growth is being made operational in an ongoing process with state and community leaders. None of our reports is 'sitting on the shelf'; all are the text for a wide variety of state actions.

State-by-State Program Outline

The common vision, strategies, and toolbox of operational techniques had to be tailored to the different political cultures and institutional and economic dynamics of each state. In each state, a different historical perspective and dynamic existed concerning the theory and practice of economic development and the place of workforce skill enhancement in that process. The locus of political power and the nature of public and private organizations concerned with economic and workforce issues varied greatly.

While JFF secured the support of the governor in the participating states, put together a multi-sector board and secured funding, it operated from different strategic positions within each state. Inevitably, interest and personal support for the research and reform initiatives came from one or more key allies. JFF's state allies have characteristically been those with a larger view of economic development than generally existed among state officials, and with a predisposition to believe that better coordination and planning of economic, education and human service institutions was necessary. These patrons were philosophically attuned to JFF's and DoL's premise and methods, and eager to develop multi-sector forums, cross-administration coordination, and the public constituency building necessary for change. The political strengths and weaknesses of these sponsors had much to do with the ultimate outcome.

The State of Indiana

Indiana is the archetypical "rust-belt" state. It has one of the highest proportions of blue-collar employees of any state in the country and a rapidly aging workforce and industrial base. Indiana's challenge is to transform its economy and the attitudes of its citizenry to support a new type of workplace dependent on higher skills.

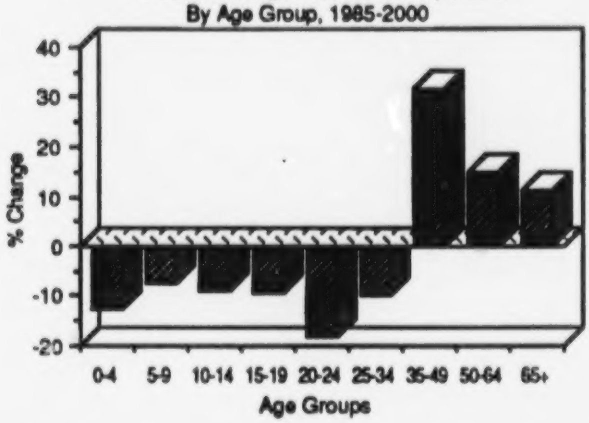
This transformation is complicated by the fact that, with the exception of Indianapolis, very few urban centers have developed as hubs of a new service and high-tech economy. While traditional manufacturing had been scattered across the state, these small cities and towns have not seen new industry replace lost jobs. One consequence has been a tremendous outmigration from Indiana's cities and towns. Indiana has lost between 6 and 8 percent of its total population in recent years as people moved to greener job pastures. JFF analysis indicates that as many as 400,000 workers in the state, especially skilled labor in manufacturing industries that are at the heart of the state's economy, will be retiring from the labor force in the next five to ten years. At the same time, less than 75,000 young persons will be entering the labor force as replacements. **Figure Six** presents a picture of the dramatic shifts in the Indiana population that we can expect in the next decades—the severity of which is surprising to even the most ardent readers of *Workforce 2000*.

The legacy of a relatively prosperous manufacturing culture includes a consistent undervaluing of education. For many years, Indiana workers needed at most a high school diploma to walk into a well-paying job at a steel mill or automobile assembly plant. That is obviously not the case today, but these attitudes persist across Indiana communities.

Indiana's political culture reflects a history of relatively prosperous and self-sufficient communities. State government policy had reflected for years a laissez-faire attitude, and was not especially proactive in statewide economic development strategy. Coming out of the recession of the early 1980s, the state exhibited a new desire to act and plan more aggressively for Indiana's economic development in the future. Business leaders and Governor Orr created the Indiana Economic Development Council, Inc., (IEDC) to act as a public-private statewide catalyst for economic development. Growing out of the Council's work was a restructuring of the state's vocational training system and the creation of the Indiana Commission on Vocational and Technical Education (ICVTE).

Figure Six

Percent Change in Indiana Population
By Age Group, 1985-2000



Source: Jobs For Indiana's Future Report-Indiana Business Research Center

The 1988 statehouse election brought even more aggressive state attention to workforce issues. Governor Evan Bayh has continued an emphasis on education reform begun by his predecessors, and is now developing a more heavily financed and revamped workforce training system.

JFF's Strategic Position. In Indiana, the executive director of the five-year old IEDC had recently pushed through a reform of the state's vocational-training structure. Brian Bosworth, then director of IEDC, saw JFF as a means to implement the newly created ICVTE mandate to develop a state-wide strategic plan for technical and adult education and to assist the Commission and its staff to organize in different ways to carry out the mandate of its enabling legislation. JFF developed its Jobs for Indiana's Future program, a one-year program that would coalesce with a report on how the changing economic and demographic structure of the Indiana economy required workforce training providers to adopt new approaches and policies.

Theoretically, ICVTE had the authority to develop policy for the whole system of adult and technical education, which was built around a statewide network of vocational schools and two-year technical colleges. The Commission was tentative in its approach and reluctant to accept the mandate of planning for the whole system. Governor Bayh, who was not involved in the process of JFF's work, but eager to promote an education and workforce preparation agenda, is now working through several initiatives to respond to the challenges outlined in the JIF report.

JFF Program Outline

Status: Project Completed

Chief Clients: Bill Christopher, Executive Director of ICVTE

Brian Bosworth, former Executive Director, Indiana Economic Development Council, Inc.

Rob Fowler, Vice-President, Indiana Chamber of Commerce

Structure: JFF provided staff to Indiana Vocational-Technical Commission responsible for developing strategic plan for workforce development.

JFF Activities:

- Focus groups with Indiana citizens
- State and sub-state industrial structure, economic and occupational analysis
- Workforce skills analysis and projections
- Employer survey and field work
- Public education: newsletters, documentary, video for targeted audiences, media contacts, and report release
- Labor market information technical working group developed
- Final Report: "Jobs for Indiana's Future"

Results:

- Governor Bayh and ICVTE conducted a series of 14 regional meetings to discuss the workforce challenges faced by Indiana.
- The Governor asked in his 1990 state-of-the-state message for a 60% increase in job training funds for Indiana employers to help them re-tool and to help Hoosier workers re-train.
- The state is currently working through various task forces to redesign the state system of job training. JFF is providing technical assistance in this effort.

- The ICVTE recently issued a request for proposals to set up work-based learning demonstrations—linking high schools and employers around the state.

The State of Colorado

Colorado has two economies. The Front Range (Denver and the metropolitan corridor extending north and south of Denver) has grown dramatically in recent years. Branch plants, high-tech goods and service firms have located there, supported by a very well-educated workforce including a significant number of out-of-staters. Elsewhere, the state is sparsely populated, with an economy dominated by the boom and bust cycles of farming and mineral extraction.

This split defines the state's political culture as well—tension between the relatively prosperous Front Range and "everywhere else" (see **Table One**), the natives versus the new immigrants and wealthy holiday vacationers. The legislature remains dominated by representation outside of the Front Range. These economic and political schisms have been exacerbated in recent years as the Colorado economy as a whole experienced a major slowdown period following a boom in the early 1980s when oil, gas, and mineral wealth helped both Denver *and* the rest of the state to grow and prosper. In the last several years, for the first time in history, more people left Colorado than migrated to the state. This factor has led to a strong desire to build a more sustainable economy for the permanent residents of Colorado, an economy that does not depend on the skills of imported talent, branch plants, or the fickle shifts of oil, gas, and tourism.

Communities around Colorado are wondering what they can do to help themselves and are beginning to conceive of workforce skills as a critical ingredient in economic growth. The native Colorado population has one of the highest adult illiteracy rates in the country. This fact is often masked by the high *average* education level of Coloradans, largely due to the influx of college and professionally educated outsiders over the past twenty years. Colorado is just beginning to develop a state government and economic development policies designed to serve the very different needs of this far-flung and regionally diverse state.

Coloradans remain independent and self-reliant residents of close-knit communities who historically have not looked to the state for much help. The challenge remains of developing state regions other than Denver in order for good jobs exist throughout the state. In this regard, local residents see the tourism industry as a double edged-sword, providing many jobs in the sub-state regions of Colorado, but jobs that are not high-skill, good paying jobs.

JFF's Strategic Position. In Colorado, a personal connection between JFF's Chairman Arthur White, Senator Tim Wirth, and the CEO of US West-Colorado, Jim Smith, resulted in a decision to bring JFF to Colorado. The initial operational role was played by a Governor's aide who had almost completed a Workforce 2000-type projection of Colorado's labor force and skill needs and saw JFF as a way to complete the project.

The Jobs for Colorado's Future (JCF) program completed the Workforce 2000 analysis of the Colorado economy and incorporated this information into a broader process of state policy-making and constituency development that culminated with the JCF report and a statewide conference on Colorado's workforce preparation needs organized by Governor Roy Romer and the JCF Advisory Board.

Table One
Distribution of Colorado Population and Employment
by Region and Industrial Sector, 1986

	Front Range	Eastern Plains	Southern Colorado	Western Slope
Total Population	83.2	4.2	1.9	10.7
Total Employment	84.5	3.7	1.4	10.4
Farm	37.2	31.5	8.7	22.6
Agricultural Services	70.3	7.3	1.2	17.1
Mining	76.0	3.3	1.1	20.1
Construction	82.3	2.9	4.6	13.2
Manufacturing	93.7	2.2	0.8	3.7
Trans., Commn., Utilities	87.0	3.4	1.5	8.5
Wholesale trade	90.2	4.0	0.4	4.5
Retail trade	82.9	3.2	0.9	12.5
Finance	86.6	2.1	1.3	10.5
Services	85.0	2.6	1.3	11.3
Government	85.8	3.7	0.7	8.8

Source: Jobs For Colorado's Future Action Plan, Colorado Dept. of Labor & Employment

Colorado provides an example of how the active support of a major private sector figure has helped the JFF process work. As CEO of US West-Colorado, Jim Smith saw JFF in the same way that several visionary public sector patrons did (in particular State Senator Al Meilkejohn and Department of Revenue Commissioner John Tipton): as taking a broader view of economic development and mobilizing new groups, armed with new information to act at the state and local levels. Unconstrained by the internal politics of a governor's office or state bureaucracy, he encouraged JFF to be very visible, to make bold recommendations, and as a result, JFF has been taken very seriously by both the governor and public sector players. Colorado was also the only state in which JFF employed a full-state, in-state executive director. This factor greatly enhanced JFF's effectiveness.

JFF Program Outline

Status: Project complete

Chief Clients: Jim Smith, CEO, US West Communications

John Tipton, Commissioner, Colorado Department of Revenue

Al Meilkejohn, Colorado Senate

Structure:

- Jobs for Colorado's Future created as an independent entity, governed by a six-member executive board
- 30 person Advisory Council of key public and private sector leaders
- In-state executive director

JFF Activities:

- Focus groups
- State and sub-state economic, demographic, occupational, and industrial structure analysis, special sub-state economy and targeted industry analysis
- Workforce skills analysis and projections
- Employer survey and field work
- Employee survey
- Limited constituency involvement
- Institutional analysis of human investment system
- Public education: newsletters, media contacts, release of research and analysis pieces
- Publication of workbook for communities to use in assessing workforce issues within the local economy and prioritizing responses
- Regional & community meetings, 3-tier process
- The JCF Action Plan: released at Governor-sponsored, statewide conference

Results:

- Widely accepted Action Plan released with Governor's endorsement.
- JCF instituted a series of community workshops and developed and deployed a technical assistance manual in targeted communities to help communities plan and organize a response to their workforce needs.
- Community response on several locally-identified issues.

- Business support for small business training initiatives.
- Steps taken to create human capital investment board to coordinate public sector investment in workforce.

The State of Mississippi

Mississippians know they are behind and need to catch up. There is a tremendous willingness among the state's leadership and a growing number of community leaders to scrutinize critically and work to change the political and economic culture that has perpetuated a poor, low-wage economy, while sister states in the South have grown.

Mississippi, in many ways, is one of the last outposts of low-wage manufacturing in the nation, with a much higher proportion of the population employed in manufacturing plants than the rest of the U.S. In addition, commercial and subsistence farming still occupies much of the population—Mississippi is the most rural state in the country, lacking major urban commercial centers.

Mississippi pioneered industrial recruitment of low-wage industries from the north a generation ago. Today it sees its chief challenge in developing the human capital and community resources and amenities in this underdeveloped state necessary to support higher-value added manufacturing and service industries. It has had some recent success in relocating very high-technology production firms to the state. The education challenge is reflected in Figure Seven—showing that the Mississippi population is not sufficiently prepared to meet the requirements of even the jobs that are growing in the state's lower-skill economy.

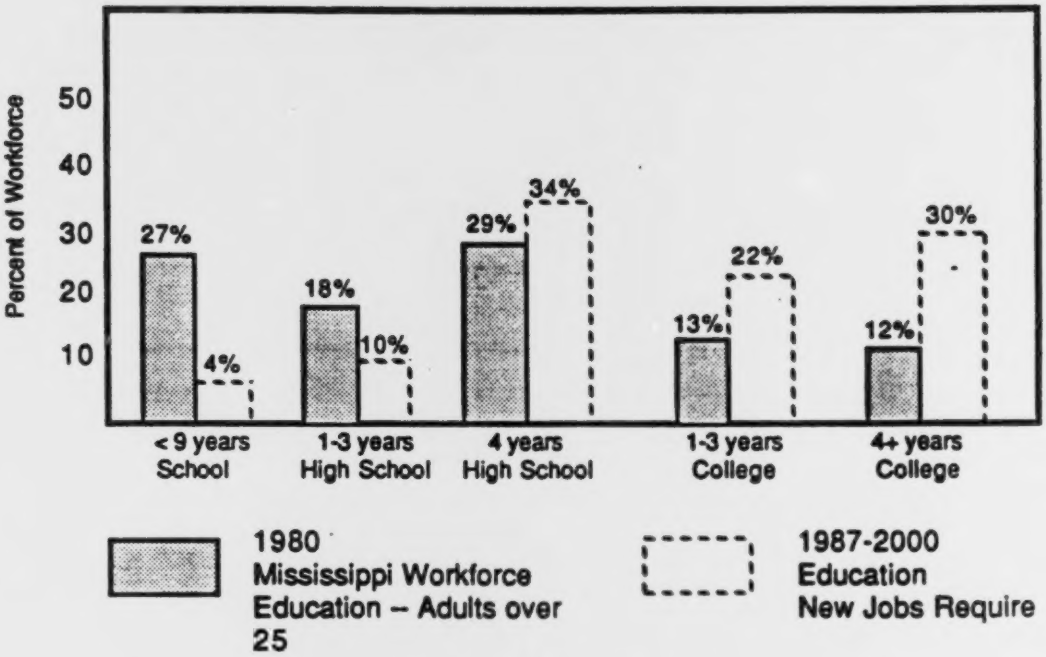
Mississippi has had a constitutionally weak state government, and lacks strong statewide organizations that can articulate and act on a vision of economic development. There is a split between local white elites who constitute an "old guard" and others who have the benefit of a broader perspective. Local interests dominate both state and local government. The state legislature, in a weak gubernatorial system, exercises tremendous influence but is not widely seen as progressive. Historically, the legislature has dominated independent boards and state bureaucracies such as transportation and education, which consequently operate as separate fiefdoms from the executive and get their resources and power from the legislature. The result is a basic need for new coordination of state policy-making, greater than most states.

Local conservatives often look askance at statewide activism in economic development. It threatens their own power bases. State leaders like Governor Ray Mabus, who have made issues out of local government corruption and the need for fundamental education reform, and want to take some of the power into the executive department, are threatening to local leaders.

Another tension is the obvious—deep racial splits define life at the state and local level. Often, two separate universes in local communities endure—white and black. Except in some areas of the Delta where blacks have numerical advantage, black leadership still operates outside the normal channels of local officialdom. Even in the Delta a few white elites often dominate the local scene. Statewide there is reluctant but growing interest and acknowledgement that efforts should be made to assist the poorest (black) parts of the state. The fact that blacks live and work disproportionately in rural areas compounds the dilemma of promoting rural economic development. The conventional notion has been "that's their problem (black) not ours (white)." But these attitudes are changing.

Figure Seven

Mississippi Workforce Education Is Below What's Needed For New Jobs



Source: Jobs For the Future Mississippi Report of the Human Resource Committee DoL, and National Center for Education Statistics

As JFF entered Mississippi, a newly elected governor (Ray Mabus) was promoting a consolidation of some executive functions, and trying to institute cross-agency bureaucratic planning on budget and policy matters. He also was promoting fundamental reforms and funding of the K-12 education system. The Administration was also developing aggressive adult literacy programs and had put in place a tax credit for employers who trained or retrained their workforce.

The Task Force on Economic Development was created by the Legislature in 1988 when legislative leaders saw that Mississippi's state government—with power fractured and decentralized—acted only reflexively, with no clear direction for the state's future economic growth.

The Task Force members appointed by the governor, and the governor's key staff who were assigned to work with the Task Force, sought help from JFF in convincing Mississippi about a new vision of its own economic development—one that depended upon both developing the resources within Mississippi and tying many divergent factors (education, infrastructure, development finance) into this common vision.

JFF's Strategic Position. JFF is in a good position to help forge a public-private agenda for Mississippi's economic development. The Task Force enjoys close links with the governor, but is characterized by an independence and quality of leadership that make it a credible voice as a non-partisan entity taking the long view.

The Task Force's mandate was broader than JFF's—it was commissioned to look at a range of issues far beyond workforce preparation. JFF's response was to bring in additional consultants with expertise in development finance, economic analysis, and infrastructure and technology issues while JFF concentrated its evaluation on the workforce preparation system. The Task Force was able to undertake a broad range of research and communication steps which have proved useful in crafting a widely accepted strategic plan (the Governor hailed it in his State of the State as "the best blueprint for Mississippi I have ever seen"). With the assistance of JFF, the Task Force is beginning the process of communicating and implementing the strategic plan through legislation and Task Force/administration working groups.

JFF Program Outline

Status:	Completing Year Two
Client:	P. D. Fyke, Governor's Assistant for Economic Development
	Mary Buckley, Special Assistant to the Governor
	Bill Cole, Former State Treasurer, Task Force Chairman Year 1
	Marshall Bennett, State Treasurer, Task Force Chairman Year 2
Structure:	Staff to 40-member Special Task Force on Economic Development, created by Legislature and appointed by governor. JFF coordinated work of four subcommittees—Human Resources, Finance, Economic Development, and Infrastructure and Regulatory—with a part performed by outside consultants.
JFF Activities:	• Focus groups • State and sub-state economic, demographic, and industrial structure analysis • Workforce skills analysis and projections • Employer survey • Analysis of Human Investment system

- **Discussions with key constituencies**
- **Public education: release of pieces of research and analysis**
- **Regional Congresses—two-tier process**
- **Task Force administration working groups**
- **Legislative drafting work groups**

Results:

- **Widely accepted strategic plan completed and disseminated broadly with Governor's strong endorsement.**
- In response to one of the Task Force's recommendations, the Governor created a Commission on Workforce Excellence—a private sector group charged with expanding the number of firms investing in their workforce and making recommendations for reform of the public training system.
- Legislative proposals in several areas of the Task Force report are to be submitted in the fall of 1990 for the 1991 legislative session.
- Governor asked his administrative interagency working groups to work directly with the Task Force in implementing the Strategic Plan in agency planning and budgeting.

The State of Missouri

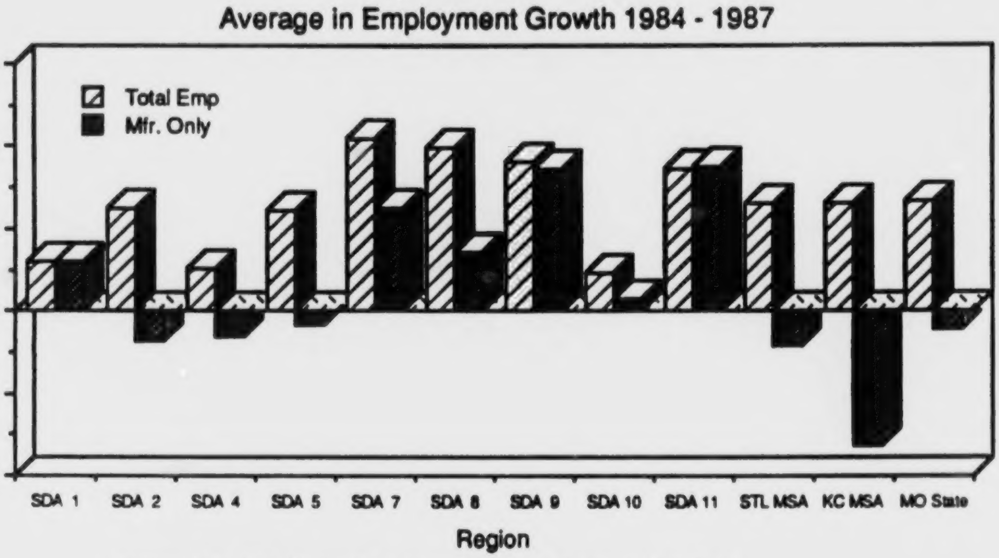
Missouri is truly a cross-section of America. Within Missouri are pieces of almost every regional economic archetype. The traditional manufacturing of the midwest, the Farm Belt, the small towns and low-tech manufacturing of the South, the headquarters and service centers of Fortune 500 companies, all come together in Missouri. The attitudes and practices of workers and firms in Missouri tell us about the rest of the nation.

Missouri has prospered as America has prospered and is now facing the conflicting signals of an economy that appears to be going in several directions at once. Painful job losses have come in many traditional industries, while new growth in retirement, services, and some high-tech sectors has seen parts of Missouri thrive.

Missouri is split into very different economic sub-state regions, with political and cultural gulfs separating Kansas City from St. Louis, and the Farm Belt from the Ozarks. The job performance across the regions has varied dramatically in recent years—see **Figure Eight**. Regionalism has become the dominant factor in Missouri's political culture, with fierce loyalties and pride in communities and a high regard for the quality of life in "my" part of the state.

Missouri does not view itself as being in any particular workforce "crisis." There is concern over the job losses in various parts of the state and a generalized acknowledgement that better education and skills are an important ingredient in the state's economic growth. When JFF entered the state very little broad attention had been paid to these workforce issues.

Figure Eight



Source: Jobs For Missouri's Future, Regional Congress Fact Book
Missouri Division of Job Development & Training

Missouri had already produced a Workforce 2000 style blueprint for action, and a governor-sponsored report on adult literacy. These reports, while widely acknowledged, did not stimulate much significant action. Governor John Ashcroft and the state's public and private sector's leadership are focusing on the issue of funding Missouri's higher education system. State government economic development policy is still largely focused on industrial retention and recruitment as opposed to human investment.

A $5 million job development fund for training and retraining existing workers had been created, which is largely marketed to new company arrivals and retaining firms in the state.

JFF's Strategic Position. In Missouri, several far-sighted officials in Governor Ashcroft's administration viewed JFF as a way to develop a human investment system for the state, a goal embraced by the governor. JFF was sought out to provide a comprehensive look at the whole learning system and how it was performing for the Missouri economy, as opposed to the existing efforts to segment pieces of the learning system (higher education, worker training). The Jobs for Missouri project is still in progress. The research and analysis have been completed, and a strategic plan is currently being drafted by the Advisory Board.

JMF has a well respected Advisory Board supervising its efforts, comprised of independent leaders from business, labor, and education. While the JMF process has been monitored closely by the Governor's staff and advisors, they have been persuaded that an independent multi-sector group can help promote some major initiatives to improve Missouri's workforce preparation system.

JMF has connected and is working closely with the other organizations and commissions addressing parts of the workforce preparation system, including the Governor's Commission on Higher Education, the State Job Training Coordinating Council, and a private sector-led Task Force examining the higher education system

JFF Program Outline

Status: Completing Year 2

Chief Clients: Carl Koupal, Director, Department of Economic Development

Tom Dueschle, Director, Department of Employment Security

Clarence Barksdale, former CEO Centerre Bancorporation, Chairman of JMF advisory board

Structure: Jobs for Missouri's Future independent entity

12- member Advisory Board.

JFF activities:

- Focus groups
- State and sub-state economic, demographic, and industrial structure analysis
- Workforce skills analysis and projections
- Employer survey
- Worker survey
- Institutional analysis of Human Investment system
- Constituency building
- Public education: release of research and analysis pieces, development of media contacts
- Regional meetings, two-tier process

Results: To be determined.

Sources

Colorado Department of Labor and Employment, *Colorado Annual Planning Information Report: Historical, Current and Projected Labor market Information for Colorado and Selected Areas* (miscellaneous years).

Colorado Department of Labor and Employment, *Occupational Employment Outlook, 1989-1994* (July 1989).

Colorado Department of Labor and Employment, *Occupational Supply/Demand Report* (miscellaneous labor market reports, miscellaneous fiscal year reports).

Colorado Department of Local Affairs & Colorado Department of Labor and Employment, *Colorado Workforce 2000* (August 15, 1988); State of Colorado, *Workforce 2000 and Beyond: Jobs and Workers for Colorado's Future* (August 1988).

Jobs for Colorado's Future, *Education and Training in the Colorado Economy* (Fall 1989); Jobs for Missouri's Future, *Education and Training in the Missouri Economy* (Spring 1990); Jobs for Indiana's Future, *Education and Training in the Indiana Economy* (Spring 1989).

Jobs for Colorado's Future, *Voices Across the Rockies: Coloradans Talk About Their Economy* (prepared by Jobs for the Future, Inc.)(March 1989); Jobs for Indiana's Future, *Voices from Across Indiana: Hoosiers Talk About Their Economy* (prepared by Jobs for the Future, Inc.)(September 1988); Jobs for Missouri's Future, *Voices from Across the 'Show Me' State: Missourians Talk About Their Economy* (prepared by Jobs for the Future, Inc.)(October 1989); Jobs for the Future, Inc.,*Voices from Across the Delta, Hills, and Coast: Mississippians Talk About Their Economy* and Future (November 1989);

Jobs for Missouri's Future, *Report on the Missouri Regional Congresses for Workforce Preparation* (prepared by Jobs for the Future, Inc.)(August 1990); Jobs for the Future,Inc., *Report on the Mississippi Regional Congresses for Workforce Preparation* (January 1991);

Indiana Department of Employment and Training Services, *Staffing Patterns in the Manufacturing Industries in Indiana* (miscellaneous Occupational Employment Statistics surveys, 1980, 1983, 1986).

Indiana Economic Development Council, Inc., *In Step With the Future: Indiana's Strategic Development Plan* (1985 & Supp.).

Indiana University, Indiana Business Research Center, *Indiana Population and Labor Force Projections, 1985 - 2000* (1985).

Missouri Division of Job Development and Training, *The Changing Structure of the Missouri Economy: A Report on Employment Trends in the State and its Regions Over the Past Three*

BEST COPY AVAILABLE

Years. (December 1988), prepared by the Office for Research in Regional Economic Development, University of Missouri-Columbia.

Missouri Division of Job Development and Training, *Employment and Labor Market Profile* (miscellaneous reports for each service delivery area)(prepared by the Office for Research in Regional Economic Development, University of Missouri-Columbia)(December 1988).

U.S. Bureau of the Census, *Current Population Survey* (miscellaneous dates).

U. S. Department of Labor, Bureau of Labor Statistics, *Employment and Wages* (miscellaneous reports).

ECONOMIC SUMMARY OF THE JFF STATES

Comparative Findings

Conducting detailed analyses of industrial structure was one of the first research projects Jobs for the Future embarked on in each state. Developing a sense of the industrial landscape and capturing the forces driving economic change in each state were essential to the JFF enterprise. Comprehensive analysis of how the critical industries in each state have expanded and declined in recent years was necessary to understand changes taking place in the employment, occupation, and income structures of each state.

JFF conducted industrial analysis at both the state and regional levels in order to devise recommendations for economic development strategies that spoke to the differing needs of local communities, as well as to the state's needs as a whole.

The following review of economic landscape in the six states in which JFF has worked is drawn from research pieces produced throughout JFF's work in each state. It should be noted that the research methodology employed by JFF in the Connecticut and Arkansas state projects was different from the methodology employed in Indiana, Colorado, Mississippi, and Missouri. In Connecticut and Arkansas, the emphasis was on future employment growth rather than on existing employment and industrial structure. In these two states, JFF used econometric forecasting to identify the likely future trends in industry, occupations, and skill requirements. The Connecticut and Arkansas state projects were completed in 1986 and 1987 respectively, making some of the information dated.

In Indiana, Colorado, Mississippi, and Missouri, JFF conducted comprehensive analyses of each state's recent history including analysis of each state's economy, educational and social welfare systems, and political institutions. JFF focused especially on analyzing the dynamics of substate regional economics. Less emphasis was placed on employment projections in these four states and more on economic development strategies that require participation of key public and private sector actors at both the regional and state level. This idea reflected a conscious decision on the part of JFF. Learning from the Connecticut and Arkansas experiences, we felt intervention in the dynamics of economic growth was essential to building a high-wage, high-skill economy. This decision was taken with the advice of national and state labor experts at a 1988 conference JFF convened at Wingspread in Racine, Wisconsin. The consensus was that econometric forecasts were of limited utility compared to substate regional economic data.

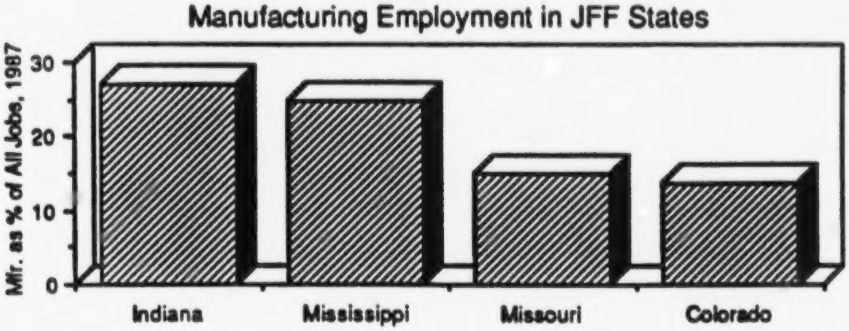
Industrial Structure

Industrial restructuring is occurring in all six JFF states. The service economy has grown dramatically in all states in the past two decades, but growth has been more dramatic in some states than in others. Service sector growth has varied in kind as well as in extent in the six JFF states. Several states have been successful at developing professional, high-wage service industries such as finance, real estate, and business services in the past two decades while others have experienced growth primarily in low-wage service industries such as retail and food service. These disparities have contributed to considerable differences in employment and income structure in the six states.

The JFF states also vary considerably in terms of the vitality of their manufacturing sectors. Manufacturing as a share of total employment has declined in all of the states in the past two decades, but the extent of that decline and the implications for each state economy are very different. Several JFF states have successfully countered the decline of traditional manufacturing by developing and attracting high technology manufacturing industries in recent years. Other states, however, remain dependent on their traditional manufacturing base.

Manufacturing. Four JFF states can be considered manufacturing states in as much as they employ a higher proportion of the labor force in manufacturing than the U.S. as a whole. Indiana, Mississippi, Missouri, Arkansas, and Connecticut all have comparatively large manufacturing bases. In these states, manufacturing accounts for one-quarter to one-third of all employment. Colorado, on the other hand, has developed into a service-based economy. Only 13.8 percent of the Colorado labor force is employed in manufacturing industries. Figure One compares the level of manufacturing in four of the states.

Figure One



Source: Jobs for the Future State Industrial Structure Profiles

The nature of manufacturing in the six JFF states runs from traditional smokestack industries to low-wage, low-skill manufacturers to higher-technology industries such as aerospace. As such, several of the JFF states are traditional manufacturing states while others can be considered high-technology manufacturing states.

Traditional Manufacturing:

- **Indiana's** manufacturing sector is characterized by traditional smokestack industries such as automobiles, machinery, primary metals, and steel. Historically, these industries have paid high wages to blue collar workers. Because these industries are particularly vulnerable to international competition and business recession, Indiana's economy has been extremely volatile for the past 15 years—experiencing large surges in both employment and unemployment. Indiana's performance in the largest and highest growth segments of high-tech has been substantially below that of the United States overall.
- **Mississippi's** manufacturing sector, in vivid contrast to Indiana's, is characterized by predominantly low-wage industries such as food processing, textiles, apparel, and leather products. There are growing examples of technology-based industries. But, as a result of the state's wage structure, Mississippi is still able to compete well against low-cost foreign producers. While as a nation, manufacturing employment has declined 8.7 percent in the last ten years, Mississippi's manufacturing employment has declined only 1.2 percent.
- **Missouri's** manufacturing base is small and characterized by a mix of light and heavy industry. The state's traditional low-wage, low-skill industries such as leather goods, apparel, and textiles have declined precipitously in the past two decades. Food processing, electrical equipment, and transportation equipment have been the largest manufacturing employers in the state for the past twenty years providing fairly steady employment. However, employment has declined in these industries in recent years as well.

High-Tech Manufacturing:

- **Connecticut** is considered one of the leading high-tech states in the country. A higher proportion of manufacturing employment and a higher proportion of firms are in high-tech production in Connecticut than in the country as a whole. Technology intensive industries such as chemicals, instruments and transportation equipment are growing rapidly.
- **Arkansas** ranks 28th in the country in terms of the percentage of employment in high-technology industries. Thus, while the state is not a leader in high-tech, technology-intensive industries are developing and are projected to grow while traditional manu-

facturing in shoes and textiles will continue to decline. Despite this shift, the majority of manufacturing employment is still in low-wage, low-skill industries.

- Colorado's manufacturing base is small, but it is less dependent on traditional manufacturing and more dependent on high-tech manufacturing than most states. Thus, despite a relatively small manufacturing sector, Colorado is blessed with a robust and growing high-tech component. Between 1980 and 1988, Colorado's high-tech manufacturing sector grew 11.4 percent. In contrast, overall employment in durable goods declined by 21 percent.

The Service Sector. The service sector, including services, trade, and finance, insurance and real estate has increased its share of employment in the past decade in every JFF state. However, like manufacturing, the nature of the service sectors varies considerably from state to state. Colorado, Connecticut, and Missouri have the most developed and complex service economies of the six JFF states. Arkansas, Mississippi, and Indiana all have less employment in services than the nation as a whole and substantially less employment in the higher-wage, higher-skill service industries such as finance and business services.

- Colorado, Connecticut, and Missouri all experienced rapid employment growth in producer services in the 1980s. Producer services primarily provide services to producers of other goods and services; they are "business oriented" and include finance, insurance, real estate, legal services, engineering, data processing, and other professional businesses. Producer services include more high-wage, high-skill occupations than other segments of the service sector. Producer services tend to grow in metropolitan areas serving complex goods producing economies. For example, business services was one of the fastest growing industries in Missouri's three major metropolitan centers between 1984 and 1987.
- While service growth has increased in Arkansas, Indiana, and Mississippi, these states have not developed higher-wage service industries such as producer services. The low-wage nature of manufacturing in Arkansas and Mississippi has not generated demand for sophisticated services. In Mississippi, service sector employment is concentrated in private household services, one of the lowest paying service occupations. Growth in Arkansas' high-tech manufacturing and retirement population will contribute to growth in higher-wage producer and health services in the future but the preponderance of low-wage manufacturing in the state has contributed to a small service base.
- Indiana's small service sector is somewhat surprising given the preponderance of high-wage manufacturing in the state. Private services and trade, both low-wage sectors, were the dominant sources of new jobs between 1986 and 1988. The lack of high-wage producer services in the state stems from the proximity of metropolitan areas such as Chicago, Detroit, Cincinnati, and Louisville. Rather than building its own high wage

service sector, Indiana imports most of its high-wage business support services from other states.

Figure Two describes a typical 'rub' in the industrial composition of the various states that clearly affects the kinds of public policy solutions that a state ought to consider. Knowing something about service sector growth is inconsequential without disaggregating the information. The implications for skills and workforce preparation are far different between Connecticut and Mississippi because of which individual service sectors are projected to grow.

Figure Two

- 64% of Connecticut's new jobs will be in the service sector, half of which will be in producer services.
- 75% of Mississippi's new jobs will be in the service sector, 58% of which will be in retail trade and restaurants.

Sources: Jobs for Connecticut's Future, U. S. Department of Labor, David Birch Projections, Mississippi Department of Employment Security.

Skills

Jobs for the Future, Inc., developed a special method for analyzing the skill content of occupations with the assistance of McBer and Co. Based on a great deal of research about jobs and the skills workers need to do their jobs well, JFF created a measuring system that describes the skills needed in a variety of occupations in five dimensions. The dimensions are:

- **psychomotor skills:** hand-eye and other physical coordination;
- **factual knowledge:** breadth and depth of knowledge within a specific field;
- **interpersonal skills:** the ability to work with others to achieve a goal;
- **cognitive skill:** the degree of critical thinking required; and
- **motivational skill:** a combination of personality development and personal initiative.

Each skill dimension is further divided into several competency levels that indicate the level at which a worker in any given occupation is expected to perform.

JIF applied the skill 'scores' to each of the major occupations listed in the forecasts prepared by each state's occupational information coordinating council.

The results are useful for a variety of reasons. First, the JFF skills show the dynamics of anticipated occupational changes between the base year and a forecast year. As the state's occupational profile changes—as its economy adds more technicians or retail service clerks, for example—the state's overall skill needs also change.

The most dramatic changes are expected to take place in the area of cognitive skills (see Figure Three) and interpersonal skills, where higher skill levels will be increasing in relative share. Educators, planners, and employers should be mindful of the need to develop these kinds of skills in the future workforce.

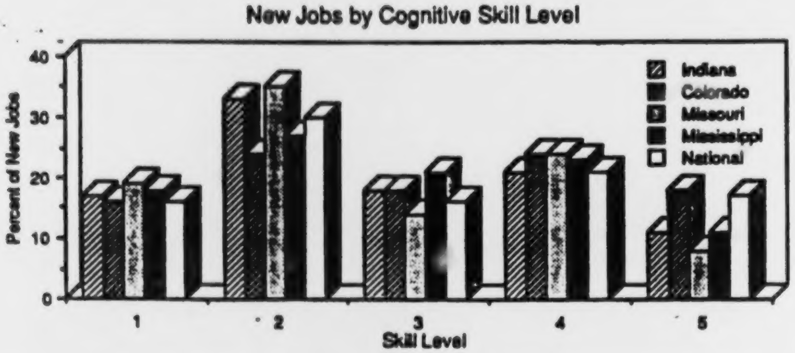
Second, the results for any state can be compared against national projections to look for areas of particular strength or weakness within the economy—it is a diagnostic tool. In general, the four JFF state skill profiles lag the nation in the growth of occupations that demand higher level skills across the five dimensions. JFF's five skill dimensions comparing skill need in the four states with that of the nation appear in the Appendix at the end of this volume.

- Indiana's skill profiles reflect the high concentrations of manufacturing jobs in the state. But they also reflect the true components of the entire Indiana economy—a state that has few managers, a weak export-base of professional services, and growth in lower-skilled retail and other trade industries.
- Colorado's profile shows that the state starts the decade of the 1990s with a good skill increment above the nation—reflecting the higher-technology jobs and lack of basic manufacturing in its economy. However, by the year 2000 the nation begins to catch up. Diagnostically, the skills profile demonstrates how the current trends favoring the growth of lower-skilled tourist and service jobs in Colorado do not help the state keep its skills edge over the nation.
- In Missouri, JFF calculated skills profiles by sub-state region. The analysis shows that the occupational growth in that state will generate only a modest demand for higher skills. The Missouri economy is not generating the high-skill jobs that it will need to establish and maintain a higher performance economy into the early part of the next decade.

Deploying the above type of skill analysis in its state work, JFF reached several conclusions about the use of skill analysis and the application of its skill methodology to existing data:

- ***Rapid technological innovation makes occupations and occupation-specific skills obsolete.*** Conclusions reached about the skill content of occupations are likely to be misleading without full and constant revision and updating. And state economies are changing too quickly to allow detailed assessments of changes in occupational skill requirements.
- ***Detailed analysis of occupations and skills requires employers to provide basic information.*** It is clear that better communication has to exist between educators and industry if the public portions of a state's learning system can succeed. Yet depending on employers for skill information can be problematic for a number of reasons: (a) it is hard to specifically document problem areas, and specificity is important; (b) employers have a tendency to overstate their needs; (c) employers do not always have fixed job

skill requirements—the hiring and retraining process is often an exercise in compromise; and (d) focusing on job skill needs often masks larger organizational issues within the firm that affect workers in more profound ways.



Skill Level	Level 1	Level 2	Level 3	Level 4	Level 5
Skill Description	Rote Memory	Diagnostic use of concepts (application and interpretation)	Diagnostic use of concepts (application and interpretation requiring perception of causality)	Systematic thinking (perception of multiple causal relationships)	Synthetic reasoning (concept formation through pattern recognition)
			Occupations		
Sample Occupations	Office Machine/ Computer Operators Metal Working Operatives Cleaning Service Workers Other Service Workers Laborers	Sales Clerks Secretaries Food Service Workers Transportation Equipment Operators	Science Technicians LPNs Accountants Sales Reps Metal Craft Workers Printing Crafts TCPU Crafts Other Craft Workers	Nurses Medical Workers Lawyers Sales Managers Insurance Sales Construction Trades Blue Collar Supervisors	Engineers Scientists Physicians Writers & Artists Computer Specialists Other Professional Workers

Source: JFF Analysis of U.S. Bureau of Labor Statistics and SOICC data.

- ***Skill demands vary from industry to industry.*** For example, managers or supervisors in manufacturing need a different set of skills than managers and supervisors in finance, insurance, and real estate. Even within the manufacturing sector, the skill content of a technician in an advanced technology-based industry will differ from one in a mature industry. Conducting an occupational analysis across industrial sectors requires even more time and resources.
- ***Skill demands vary depending on a company's management style.*** A company engaged in participative management will place a premium on communication skills whereas a company engaged in hierarchical management techniques will place a premium on ability to follow orders.
- ***Skill demands vary depending on a company's marketing strategy, product life cycle, and the skill training life cycle.***
- ***Skill demands vary depending on the individual job holders training and background/experience.***

State By State Analyses

JFF conducted a detailed economic analysis at the beginning of each state program—geared toward assuring that information concerning job growth (or decline), industrial shifts, occupational trends, skill levels, income levels and other basic information about the state were gathered together in one place. The mass of information and its technical detail will not be duplicated for purposes of this report. Instead, we seek to summarize some of the key issues about each of the state economies that helped define a problem and offered opportunities for public debate on solutions.

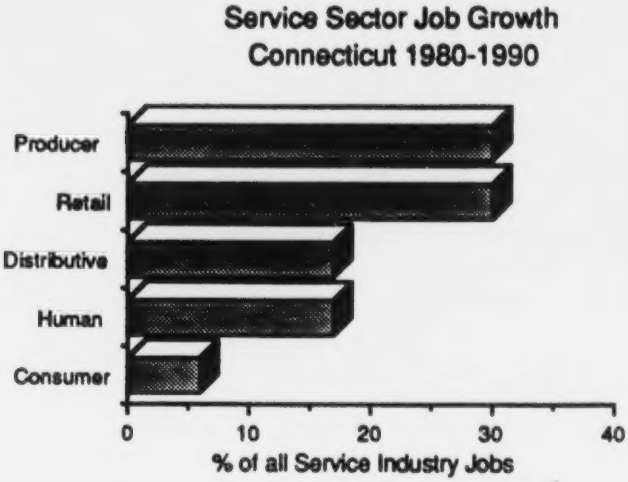
The analysis differed across the six states depending on the information available prior to the start of the JFF program. Also, the six state programs span almost seven years of effort. Hence data from the earliest programs (Arkansas and Connecticut) is dated relative to the most recent (Missouri and Mississippi).

Connecticut

Industrial Structure. Connecticut's industrial base is well balanced and healthy. Structural change in the economy underlies a strong overall fifteen percent growth in jobs. Manufacturing will remain a major part of Connecticut's economy; technology-intensive manufacturing will grow while traditional manufacturing will decline. Service employment will grow rapidly with the greatest growth in producer services.

Manufacturing. Technology-intensive industries such as chemicals, instruments, transportation and electrical equipment are growing and will add 10,000 jobs by 1995. Connecticut is considered a leading state in high tech firms and employment. By contrast, traditional manufacturing industries such as textiles and primary metals will suffer continued decline, losing more than 9,000 jobs by 1995.

Figure Four



Source: Jobs For Connecticut's Future, DoL, Birch Projections

Overall, Connecticut is losing manufacturing jobs. Despite job growth in high-tech manufacturing, the state will experience an overall decline of 15,000 manufacturing jobs between 1984 and 1995. Despite this loss, Connecticut manufacturing will employ a larger proportion of the workforce in 1995 than the national average. In 1986, about 32 percent of Connecticut workers were employed in manufacturing compared to 22 percent of the nation's workers as a whole. By 1995, an estimated 27 percent of Connecticut's workers will be employed in manufacturing.

Connecticut ranks first in the nation in terms of the percentage of its labor force employed in export-related manufacturing industries (6.5 percent). The transportation and electrical equipment industries, in particular, sell many goods abroad. As a result, international competition is a major concern for Connecticut employers.

Services. Service employment is projected to grow to 31 percent of the state's total employment by 1995—up from 22 percent in 1976. When combined with FIRE and wholesale and retail trade, the service sector will employ 65 percent of Connecticut's population.

The largest growth in services in the 1980s was in producer services (see Figure Four). By 1994, producer services alone will employ approximately 25 percent of all people in Connecticut. Producer services include finance, insurance, real estate, business services, legal services, and miscellaneous professional services. Business services will increase the most of all producer services as companies increase their use of computer services, software packages, systems analysis, and leasing. Human services and retail services including eating and drinking establishments will also grow rapidly.

Overall employment growth in services between 1984 and 1995 is estimated at 200,000.

Job Creation. Most of the job growth in Connecticut during the recent past came from the expansion of companies already located in the state. Movement of firms in and out of the state has had a moderate impact on employment.

During the past four years, firms with fewer than twenty employees have generated about sixty percent of the state's new jobs, although they account for only twenty percent of total employment. Small companies will continue to generate growth in the future.

Occupational Structure. In general, Connecticut's occupational structure is moving toward higher proportions of white-collar work: professional, technical, managerial and clerical jobs. Producer services and small firms, the engines of job growth in Connecticut, tend to employ high proportions of white collar workers. There are some signs of bifurcation in the state's occupational structure with and increase in both high-skill and low skill jobs and a decrease in skilled and semi-skilled production jobs.

- Craft and operative jobs will continue to decline in employment terms. In 1975, 18 percent of the workforce was employed in craft and operative jobs; by 1995 only 9 percent will be employed in these occupations.
- Clerical jobs are the state's number one occupation and will continue to employ the greatest numbers throughout the decade.
- The number of service workers is growing rapidly. Service jobs, which tend to have fewer skill requirements, will grow rapidly by thirty-five percent or 62,000 workers between 1984 and 1995. The number will have more than doubled in two decades.

Income. Connecticut ranked second in per capita income in the United States in 1986. Since 1981, its growth in per capital income has been sixty percent higher than the national average.

Arkansas

Industrial Structure. Despite long term economic restructuring, Arkansas continues its dependence on manufacturing and agriculture. Increasingly, the state's economic future is tied to high-technology manufacturing. Arkansas derives significantly less of its gross state product from financial and other services than is the case for the country as a whole. Several industries are projected to decline sharply over the next decade. Job losses will be concentrated in many of the state's traditional industries including agriculture, leather, and textiles.

Manufacturing. While manufacturing will decline relative to employment growth in services, manufacturing remains critical to Arkansas' economic health. By 1995, manufacturing will account for approximately 26 percent of employment, down from 30 percent in 1977. However, manufacturing employment in Arkansas will continue to exceed the projected national average.

Manufacturing growth will occur primarily in technology-intensive, durable goods products such as electrical equipment, machinery and metal fabrication. The state ranks 28th in the percentage of its workforce in high-technology employment.

The state will continue to lose employment in traditional manufacturing industries such as shoes and textiles. Food processing is the only nondurable manufacturing industry predicted to grow rapidly in the next decade. Projected growth in food processing is largely because of the dramatic growth of the poultry industry.

Services. Service industries grew from 12 percent of the labor force in 1970 to 17 percent in 1985. Despite this growth, Arkansas is far below the national average in terms of the proportion of the population employed in services.

Employment growth in services will be concentrated in health services and producer services. Health services will grow more than any other service industry by 1995, reflecting the growing retirement community in Arkansas. Producer services, which provide financial, insurance, real estate, business, legal and other professional services, are expected to grow by 44 percent by 1995. The bulk of growth in producer services will occur in business services.

Income and Earnings. Arkansas does not fare particularly well compared to national averages: the state's per capita income is low compared to other states—per capita income in 1984 was $9,807, a figure which is $3,000 below the national average and 47th in the nation; hourly earnings of production workers are very low, ranking 44th in the nation; and, the state ranks 3rd nationally in terms of the percentage of people living in poverty (18 percent in 1985). Poverty is particularly acute in rural areas of the state.

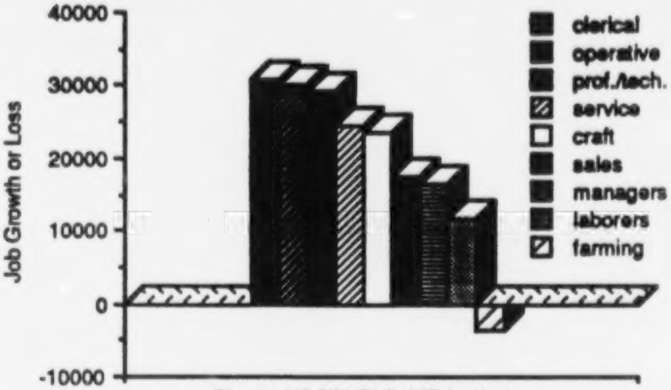
Occupational Structure. New job opportunities in Arkansas will be primarily in service-oriented occupations for clerical workers, sales workers, and managers. This will be true in both service and manufacturing industries (see **Figure Five**).

The growth of service oriented occupations in manufacturing industries reflects a shift away from production jobs toward information-intensive jobs like marketing, planning and product development. Traditional manufacturing jobs such as laborer and operative will grow more slowly than overall job growth in the state through 1995.

Skills. The fastest growing occupations in Arkansas require higher levels of knowledge, thinking and interpersonal skills than was the case in the past. Occupations requiring higher order cognitive skills such as systematic thinking and synthetic reasoning are growing substantially more than average. In contrast, occupations requiring only rote memory—the lowest level of cognitive skill, are growing considerably less than average.

Figure Five

Occupational Change in Arkansas, 1982-1995



Source: US DOL/BLS, JAF Analysis

Education. Arkansas ranks 42nd in terms of the number of the average number of schooling completed by adults; the median level of education is 12.2 years. Almost half (45 percent) of Arkansas adults (25 years or older) do not have high school diplomas. Eleven percent of Arkansans are defined as functionally illiterate.

Regional Variation

Forty-eight percent of Arkansas' population lives in rural areas and only 40 percent of the state's employment base is in metropolitan areas, compared to 70 percent for the South as a whole. In general, counties near metropolitan areas with good access to highways are experiencing employment growth. Overall these counties have the best mix of new technologies, emerging industries and an adequate service sector. The rural economy of the state has a less well-balanced industrial base.

The rural economy in Arkansas is not homogeneous. Some areas such as North Central Arkansas are prospering due to the growth of the retirement economy and the poultry industry. Many more rural areas, however, are struggling with economic restructuring due to dependence on agriculture and little if any high-technology industry. Many rural areas' ability to respond to economic restructuring is severely limited by lack of wealth and low education levels.

Colorado

Industrial Structure. Colorado's industrial structure can be described as a service economy with a strong high-tech manufacturing component. Overall, the state's economy has shifted to a service base in the past two decades. Manufacturing has steadily declined in relative importance in Colorado's economy in this period although it continues to be critical to the health of the economy. As in the United States as a whole, manufacturing employment is remaining fairly constant in absolute numbers in Colorado; it is losing its share of overall employment because the service sector is growing at a much faster pace overall. Manufacturing employed 13.3 percent of Colorado's labor force in 1988; services, trade and finance combined to employ 55.5 percent of Colorado's labor force.

Between 1970 and 1988, the service, financial, and trade industries combined accounted for 71 of every 100 net new jobs. By contrast, the goods producing sector accounted for about 9 of every 100 new jobs. These figures however, conceal the dynamism of Colorado's high technology manufacturing sector.

Manufacturing. Within manufacturing there is less dependence on low technology sectors in Colorado and greater dependence on high and very high technology than in most states. Total wage and salary employment in high-tech manufacturing grew by 11.4 percent—outperforming the Colorado economy as a whole. Transportation equipment and electronic equipment were two of the five fastest growing industries in the entire state between 1980 and 1988. By contrast, lower technology industries faired poorly in the 1980s. Employment in primary and fabricated metals, for example, decreased by 32 percent while employment in stone, clay and glass making dropped by 30 percent.

Manufacturing employment is highly concentrated in the Front Range region of the state. Fully 94 percent of all manufacturing jobs are located in the Front Range.

High-technology manufacturing in particular is concentrated in the Denver-Boulder area and the Southern Front Range. A large proportion of the high-tech manufacturing in the Southern Front Range is defense-related.

The Northern Front Range is heavily dependent on a few manufacturing branch plants, particularly food processing plants. Approximately half of all manufacturing employment in the Northern Front Range is concentrated in eight food processing plants.

The Service Sector. Colorado's service economy grew by about 76 percent between 1980 and 1986. Producer services grew at an astounding rate of 261 percent during this period. They are "business oriented" and include finance, insurance, real estate, legal services, engineering, architectural and other professional businesses. Overall, the fastest growing industrial sector in Colorado between 1980 and 1988 was business services.

Occupational Structure. Colorado's occupational structure is bifurcating with growth at the high and low ends of the spectrum and the loss of mid-level jobs. The net change in new jobs in Colorado between 1980 and 1988 was heavily skewed toward higher-level white collar occupations and sales workers. Sixty-two of every 100 net new jobs during this period were created in the professional, technical, and managerial occupations. An additional 36 percent of the new jobs involved sales workers. Low-skill jobs projected to increase include helpers and laborers, janitors, and other service jobs. Together, skilled craft, machine operators, and general labor occupations declined by 22 percent.

In 1987, blue collar workers faced unemployment rates three to five times as high as professional and technical workers in Colorado. The changing structure of business organization and production is largely responsible for the dramatic differences in occupational stability between blue collar and professional/technical occupations.

Part-time and temporary work are an increasingly important part of Colorado's occupational structure as companies down-size and contract out functions like data-processing, public relations and clerical work.

Skills. JFF's skills analysis shows that the lead that Colorado has over the nation in skill jobs will diminish over the next decade. This is related to the comparatively lower skill needs of jobs that are growing fastest in the state's economy—jobs in consumer services, retail sales, and in tourism and retirement-related industries.

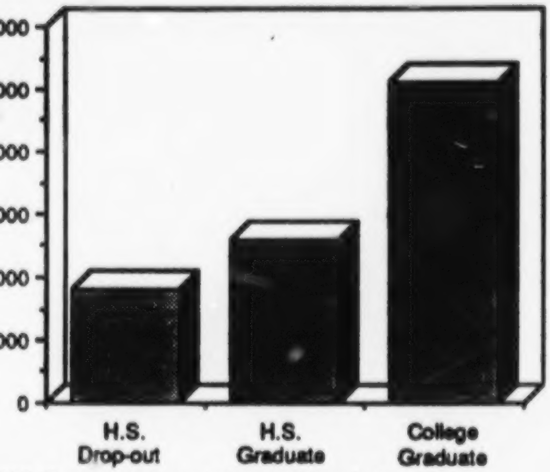
Income. The shift in employment to the service sector in Colorado has adversely affected real earnings of workers in the 1980s. Earnings levels were directly tied to education levels. Good employment and earnings opportunities existed for college graduates despite the economic recession. The 1980s were less kind to high-school graduates and drop-outs, however. Colorado families headed by a high school drop-out had a median income of $18,000 in 1987 vs. $26,700 for families headed by a high-school graduate and $51,000 for families headed by college graduates (see **Figure Six**).

Adjusting for inflation, real annual earnings increased by less than 1 percent between 1980 and 1988. The real median income of Colorado families fell by 2 percent between 1982 and 1987 while the median U.S. family income increased by 11.5 percent in 1987 dollars. All of the decline in median family income was accounted for by families with household heads who do not have college degrees.

The bifurcated income structure which characterizes Colorado reflects a bifurcation in educational attainment. Colorado has the highest proportion of residents with four or more years of college in the country. However, Colorado also has the eleventh highest rate of illiteracy of all the states and higher than average high school dropout rates.

Figure Six

Colorado's Median Family Income,1987

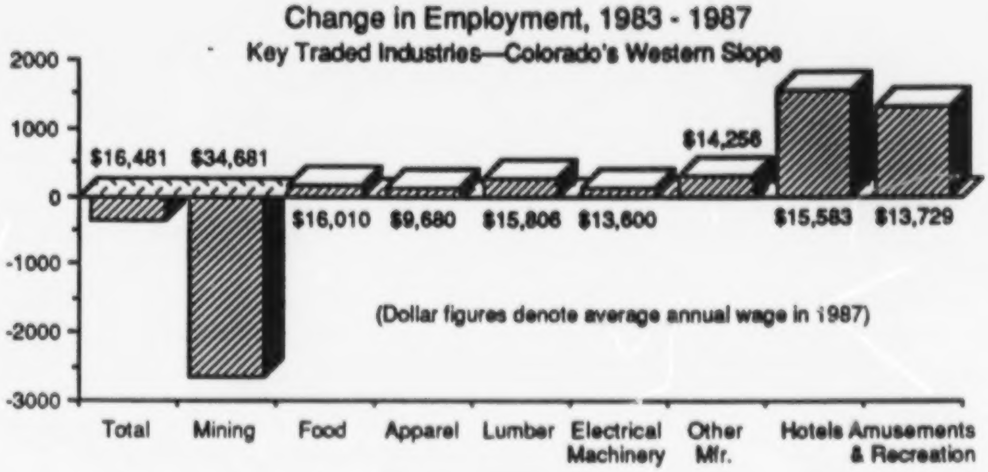


Source: U.S. Bureau of Census, Current Population Survey

Regional Variations. Colorado's regional economies differ profoundly in their composition, earnings profile, skill levels, culture, and future outlook. Rural areas are stagnating or declining—both in jobs and population. The income gap between urban and rural parts of Colorado is growing, and the industrial structure of the most prosperous areas of the state is shifting.

- **The Front Range.** The Front Range has the healthiest economy in the state by far. Average job earnings in the Front Range were 18 percent higher than the average in the rest of the state. The Denver-Boulder region is the heart of the Front Range economy and has long been the commercial and economic center for the Rocky Mountains.
- **The Western Slope.** The Western Slope's economy has suffered as a result of the decline in mining activity—a high-wage industry. Employment declines have been offset by rapid growth in the tourism industry. Over half of the growth in service sector jobs between 1980 and 1987 was in hotels and recreation. However, the low-wage nature of service jobs in the Western Slope has contributed to an overall decline in regional employment and an increasingly bifurcated income structure (see Figure Seven).

Figure Seven



Source: Jobs For the Future, Colorado Department of Labor & Employment

- **The Eastern Plains.** The Eastern Plains' economy is stagnating in several sectors: employment in manufacturing has decreased 20 percent since 1984, as has employment in mining and retail trade. The agricultural sector is strong, however. Farming provided 25 percent of all jobs in 1986 and nearly 30 percent of regional income.
- **Southern Colorado.** Southern Colorado's economy has been depressed for many years and is the weakest economic region in the state. Average earnings in Southern Colorado are the lowest of any region in the state and transfer payments (social security, welfare and Medicaid) provided 25 percent of regional income in 1986—more than twice that of any other region.

Indiana

Industrial Structure. Despite industrial restructuring, Indiana remains predominantly a manufacturing state. Manufacturing defines the job and wage profile for workers in the state as well as the skills workers are expected to bring to the workplace. Though shifting to a service economy like much of the United States, Indiana is still highly dependent on manufacturing for much of its employment and most of its income.

Because of the dominance of the automotive industry and durable goods sectors, the Indiana economy has been characterized by extreme volatility. The economy experienced sharp employment declines between 1973-75 and 1980-82; modest growth between 1982-86; and substantial gains between 1975-79 and 1986-88.

Manufacturing. Manufacturing employment peaked in 1973 but still accounts for 28 percent of all employment—a much higher percentage than the national average of approximately 20 percent. Despite the continued health of Indiana's manufacturing sector, 125,000 manufacturing jobs were lost between 1973 and 1988.

Within manufacturing, Indiana's industrial structure is highly concentrated in "mature" firms. Indiana's mature industries include auto parts, machinery, primary metals and steel (see Figure Eight). Unlike high-technology industries, mature industries have a greater tendency to stagnate in terms of job growth and are highly vulnerable to international competition and business recession.

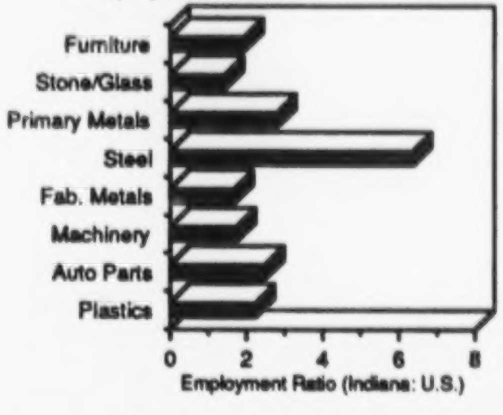
Because of the predominance of mature industries, Indiana is not likely to generate large numbers of manufacturing jobs in the next ten to fifteen years.

High technology manufacturing accounts for approximately 1 in 7 manufacturing jobs in the state. Employment in high-tech industries tends to be in lower growth segments, and Indiana's performance in the largest and highest growth segments of high-tech has been substantially below that of the United States.

In general, manufacturing industries in Indiana are downsizing, contributing to employment losses. The main cause of this change among smaller business units is the implementation of automated manufacturing technologies.

Figure Eight

Employment Ratios In Mature Industries



Source: Jobs For Indiana's Future - Executive Report

Services. Service jobs accounted for about 41 percent of all new jobs between 1973 and 1988. Private services and trade were the dominant sources of new jobs in Indiana between 1986 and 1988, together accounting for more than 50 percent of all net new jobs.

Despite this job growth, the Indiana economy cannot be considered service-based for two reasons: (a) the continued strength of manufacturing; and (b) the lack of export-oriented service industries.

Indiana is not developing a significant export-based service sector. Most service job growth is in retail and wholesale trade and personal and consumer services. Indiana has not successfully developed higher paying service industries that provide information and business support services. As a result, the state still imports a great deal of business service from other states. This trend stems in part from geography; a high percentage of the state's population and economic activity is located at state borders and draws services from Chicago, Detroit, Cincinnati, and Louisville.

Income and Earnings. Family income in Indiana is low compared to the national average because of lower than average hourly wages. Wage and income loss will continue and worsen for Indiana's families with the growth of low-wage service jobs. The average service job in Indiana pays 40 percent of the average manufacturing job.

Pressures keeping wages low in Indiana include:

- Indiana's economy is relatively under-represented in high-wage service sectors such as finance, professional, and business services.
- Aggregate employment of professional, technical, and managerial workers is well below the national average.
- Workers in all of Indiana's industrial sectors, except manufacturing, had lower average earnings than was true of U.S. workers.

Evidence suggests that Indiana's income structure is bifurcating. Between 1973 and 1986, the poorest 20 percent of families lost about 22 percent of total earnings while the 20 percent of families with the highest incomes increased its total share of income.

Occupational Structure. Because of continued dependence on manufacturing, employed males in Indiana still remain strongly dependent on craft and semi-skilled operative positions. In 1978, half of all employed males held jobs in blue collar craft and operative positions; in 1988, 43 percent still held operator, fabricator, or assembler positions.

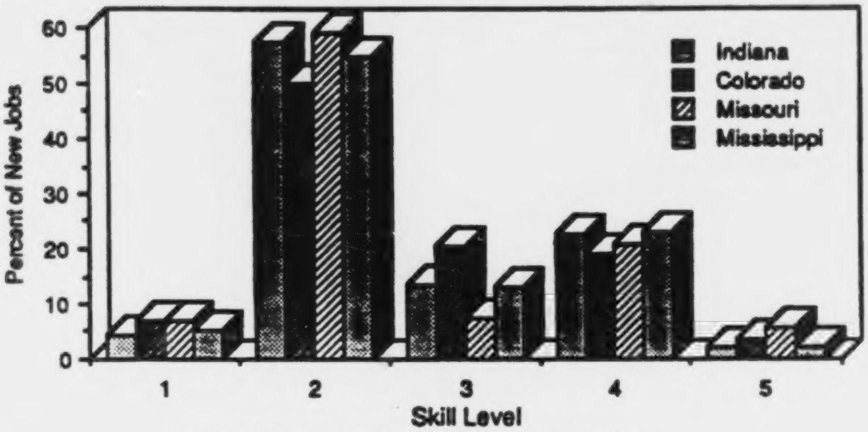
Only 23 percent of Indiana's employed workers held professional, technical and managerial positions in 1988. This is well below the national average and ranks Indiana 48th among all states in the country. The low percentages of workers in these occupational categories is explained in part by the lack of high-wage, high-skill service industries in the state.

Skills

- In the dimension of **psychomotor skills**, Indiana leads the U.S. at the higher ranges of the competency levels because of the concentration of jobs in goods production—those that tend to require greater physical manipulation of materials (see Figure Nine).

Figure Nine

New Jobs by Psychomotor Skill Level



Source: Jobs for the Future, McBer & Company

- Indiana far exceeds the U.S. at Skill Level One in **interpersonal skills**. This also reflects the high concentration of assembly-type workers in manufacturing industries. The recent changes in work organization that are taking place in some areas of the state may push more level one jobs to higher levels.
- In **factual knowledge skills**, the U.S. far exceeds Indiana's new jobs at the highest skill level—jobs that require in-depth knowledge in more than one discipline. In part, Indiana's scores at this level reflect its lack of professional service jobs that are more likely to require both broad and deep factual knowledge.
- New jobs in the U.S. are expected to exceed Indiana's new jobs at the higher skill levels in **cognitive thinking skills**. More of the nation's jobs will require the systemic, synthetic, and symbolic reasoning than those in Indiana.
- For **motivational skills**, the U.S. again leads Indiana in new job growth at the higher skill levels. Indiana's growth occupations are far more likely to fall into the category of jobs where the worker is motivated by financial security. In the U.S., new jobs will be generated in areas where the workers are motivated by other factors such as power or entrepreneurial accomplishment.

Mississippi

Industrial Structure

In the past three decades, Mississippi has moved from being an agricultural to a manufacturing state. Mississippi remains a manufacturing state today with a higher percentage of workers employed in manufacturing than the U.S. average. Manufacturing has played a critical role in helping the state diversify its economy which has historically been based on agriculture.

Like other Southeastern states, Mississippi gained much of the manufacturing that the Northeast and Midwest lost in the 1970s. Unlike many other states in the South, however, Mississippi has been relatively successful in maintaining its manufacturing industry in the face of increasing international competition.

The state's non-manufacturing sectors have shown weakness in growth in the past decade. In every sector except manufacturing, Mississippi's growth lagged behind the U.S. between 1979 and 1987.

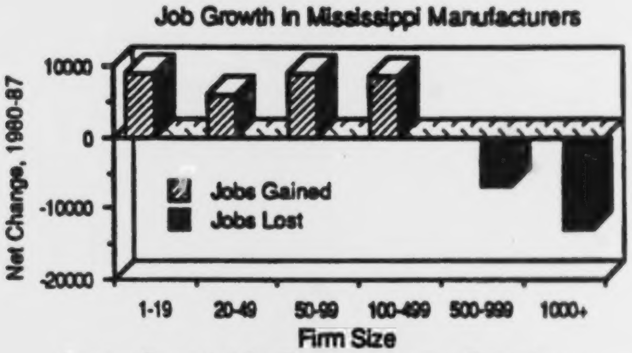
Manufacturing. Between 1979 and 1987, Mississippi lost only 2.7 percent of its manufacturing jobs, compared to losses of 9.2 percent nationally. In 1987, the manufacturing sector employed 26.4 percent of the state's labor force.

Although the overall outlook in manufacturing is positive, in the state three trends raise concern about the sector's future competitiveness and its ability to improve the economy and standard of living in the state:

- the state has lost competitive advantage in several major industries including electrical equipment and transportation equipment. These sectors appear to be less productive in Mississippi than in other parts of the country.
- Mississippi has experienced several instances of in-migration of very high-technology plants in recent years. For example, NASA relocated a solid rocket booster facility to Mississippi. The state needs to address both basic skill gaps and worker retraining needs in order to continue building on technology opportunities.
- because the state's manufacturing base is in low-skill, low-wage industries, the state has not been affected by international competition in the same way as a state with a high proportion of traditional manufacturing industries such as steel and auto. When competition in the low-wage, low-skill sector intensifies as it inevitably will, Mississippi will face the same job and income losses felt by traditional manufacturing industries in other states. Manufacturers must be cognizant of the need to modernize these sectors to maintain advantage.

Medium-sized companies (20-249 employees) have been the engine of manufacturing growth in Mississippi in the 1980s (see Figure Ten). Medium-sized companies have been the largest source of new manufacturing jobs and the most stable source of jobs in the state. The largest and smallest companies, by contrast, were the least likely to expand in the 1980s. Large companies were the most likely to decrease in employment terms of all firms. Fully two-thirds of firms with 1,000 or more employees contracted between 1980 and 1987.

Figure Ten



Source: Report of the Economic Process Committee
Corporation for Enterprise Development

The Service Sector. Mississippi's service sector has grown in the last decade and is now the largest employer in the state. However, service industries in the state have not grown as fast as their counterparts nationally. Between 1979 and 1987 service employment growth in the U.S. grew by 42 percent; in Mississippi it increased by only 17 percent. Employment growth in the trade and finance sectors also lagged behind the nation. Service sector employment is concentrated in low-wage sectors such as private household services. Employment is very low in higher wage sectors such as business services.

The trade, service, and finance sectors are weak in the state because low-wage manufacturing historically has not demanded many sophisticated support services.

In the service sector, small establishments generated the most jobs throughout the 1980s. Establishments with under 9 employees generated 3 out of 5 new service sector jobs.

Income and Earnings. Per capita income and median family income in Mississippi both fall well below the national average. In 1980 national PCI stood at $7,298 compared to $5,138 for Mississippi. Likewise, median family income for the nation stood at approximately $20,000 while Mississippi stood at $14,591.

These income and earnings trends have continued throughout the decade.

Regional Variation. Mississippi is one of most rural states in the country—53 percent of the state's population live in rural areas. Unfortunately, continuing economic decline in agriculture-based rural areas is not being off-set by emerging new businesses. Large areas of the state—

in particular the Mississippi Delta—remain tremendously poor and under-developed, while growth is occurring in clusters around Jackson, Tupelo in northeast Mississippi, and along the Gulf coast.

- With high outmigration of whites, all of the increase in the state's working age population between 1980 and 1987 was accounted for by blacks. Blacks are more dependent on part-time employment than whites—47 percent of part-time black workers want to be full-time workers.
- 6 of 10 new workers in Mississippi will be women or minorities in the next decade.

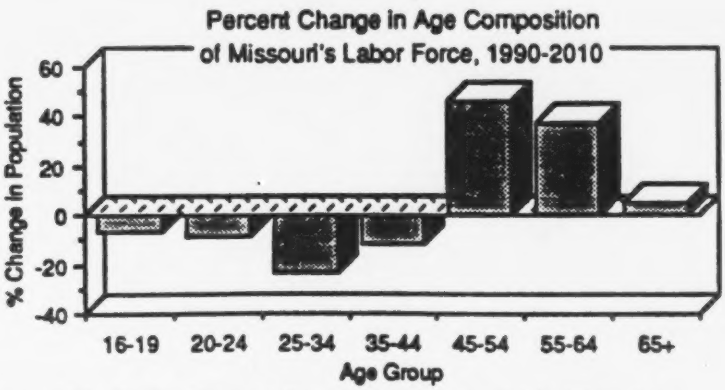
Missouri

Industrial Structure. The Missouri economy has been hit hard by international competition in the past two decades. Many of Missouri's traditional manufacturing industries such as leather goods and apparel and textiles have lost thousands of jobs. The state's once expanding agricultural base is stagnating due to fundamental market changes, soil erosion, and the restructuring of agricultural financing.

Services have recently surpassed manufacturing as the number one employer in the state. Nearly 90 percent of all new jobs created in the state between 1984 and 1987 were in services, trade and finance, insurance, and real estate. A large and growing retiree community in the state has contributed to growth in the health and retirement services (see **Figure Eleven**).

Overall, the Missouri economy has grown more slowly than the U.S. economy during most of the post-WWII period. Within the West North Central region of the United States, however, Missouri has shared disproportionately in employment growth during the 1980s.

Figure Eleven



Source: Jobs for the Future, Missouri Department of Administration

Manufacturing. All of the state's manufacturing job loss occurred in the 1980s; manufacturing employment increased slightly in the 1970s. By 1986, manufacturing employed only 15 percent of the state's population, well below the national average.

Job loss was greatest in traditional manufacturing industries such as leather products and apparel and textiles. Several manufacturing industries in the state displayed strong growth during the 1980s, however. The most impressive employment gains were found in printing and publishing, furniture and fixtures, and instruments.

Employment in the strong manufacturing industries in the state have been fairly consistent over the last two decades. Food products, electric equipment, transportation equipment, and motor vehicles are the largest manufacturing employers in the state.

Services. Service employment grew rapidly in the 1970s and 1980s. The service sector employed one quarter of the state's population in 1986 compared to 17 percent in 1969. Services, Fire, and trade combined employed approximately 53 percent of the state's population in 1986. Overall service employment is projected to grow 82 percent between 1980 and 2000. The most rapidly expanding segment of the service sector in this period was business services. Employment in business services tripled in two decades, employing nearly 20,000 people by 1986.

Fire contributed the most new jobs to the Missouri economy after services. Both real estate and the banking and credit industries displayed very strong growth in the 1980s.

Income. In 1960, per capita income in the state stood at $2,103, only 5 percent below the national average. By 1982, however, per capita income in the state stood 9 percent below the national average at $10,170. Per capita income in Missouri is projected to slip to 11 percent below the national average by 2000.

Decline in per capita income is explained simply by fact that the employment sectors that are projected to grow most in employment terms are the same ones which are forecast to grow least in per employee pay. By 2000, average annual service earnings are projected to be approximately $200 below the national average and to rank last in average among all industrial sectors in the state.

Regional Variation

- **Northern Missouri**—Northern Missouri's economy is primarily agricultural. In the 1970s and 1980s, Northern Missouri's agricultural enterprises were dominated by grain production. Many northern towns suffered from declining crop income and the restructuring of purchasing and marketing patterns. The Northern part of the state has not been highly successful in developing alternative economic activities to farming. High poverty and welfare rates characterize many northern towns.

  Many northern towns have become retirement communities as older farmers left farming. The predominance and growth of the nursing and personal care facilities industry, especially in the northeastern part of the state, reflect this trend.

Agriculture and farming have industrial "spin-off" effects for the region as a whole. Food processing and wholesale trade, driven by the sale of farm equipment, are two important employment sectors in the region.

- Southern Missouri—Southern Missouri has traditionally had a more diversified economy than Northern Missouri. In agriculture, there is greater emphasis on livestock and dairy. The growth of small industrial production and the recreation industry helped to offset declines in employment and income as agriculture production declined in the southern part of the state in the 1970s. With its wealth of lakes and outdoor attractions, recreation and tourism are slated to be the primary industry in Southern Missouri by 2000.

  The leather and apparel industries are large sources of employment in southcentral and southeastern Missouri. While these industries continue to be among the largest employers in the region, they are experiencing large decreases in employment.

  Nursing and personal care facilities are growing rapidly throughout the southern part of the state, reflecting the growing retirement community.

  In the southeastern part of the state, declines in the region's older manufacturing industries have been offset by employment growth in motor vehicles and equipment and textiles. As a result, southeastern Missouri has actually seen an increase in manufacturing employment.

- The southwestern region of the state has a strong food processing base. Meat products, poultry processing, and dairy products are growing industries in this region.

- Metropolitan Centers such as St. Louis, Kansas City and Springfield serve as the state's major metropolitan centers.

  In all three metropolitan centers, employment growth has centered around the service, retail, and financial sectors of the economy. In particular, business services are booming in metropolitan areas. As commercial developments expand in these areas, more and more companies are employing the services of subcontractors in areas such as temporary employment and data processing.

Sources

Colorado Department of Labor and Employment, *Colorado Annual Planning Information Report: Historical, Current and Projected Labor market Information for Colorado and Selected Areas* (miscellaneous years).

Colorado Department of Labor and Employment & U. S. Department of Labor, Bureau of Labor Statistics, *Colorado ES-202, Employment and Wages* (miscellaneous data files, 1982 - 1988).

Colorado Department of Labor and Employment, *Occupational Employment Outlook, 1990 - 1995*. (March 1990).

Indiana Department of Employment and Training Services, *Staffing Patterns in the Manufacturing Industries in Indiana* (miscellaneous Occupational Employment Statistics surveys, 1980, 1983, 1986).

Indiana Occupational Information Coordinating Council, Indiana Department of Employment and Training Services, *Indiana's 1985 - 1995 Occupational Projections* (1989); Indiana Occupational Information Coordinating Council, Indiana Department of Employment and Training Services, *Indiana's 1980 - 1990 Occupational Projections* (1983).

Jobs for Missouri's Future, *Human Investment in Missouri* (prepared by Jobs for the Future, Inc.)(June 1990).

Missouri Department of Labor and Industrial Relations, Division of Employment Security & U. S. Department of Labor, Bureau of Labor Statistics, *Missouri ES-202, 1988 Employment and Wages* (July 1989).

Missouri Division of Job Development and Training, *Employment and Labor Market Profile* (miscellaneous reports for each service delivery area)(prepared by the Office for Research in Regional Economic Development, University of Missouri-Columbia)(December 1988).

Missouri State Census Data Center, Missouri State Library, *Missouri Population Projections to Year 2010* (1988).

State of Missouri, *Opportunity 2000* (Report of the Missouri Opportunity 2000 Commission)(1988).

U.S. Bureau of the Census, *Current Population Survey* (miscellaneous dates).

U.S. Bureau of the Census, *General Population Characteristics: United States Summary* (1983).

U.S. Bureau of the Census, *General Social and Economic Characteristics: ________* (miscellaneous state volumes)(1983).

U.S. Department of Commerce, Bureau of Economic Analysis, *Total Full-Time and Part-Time Employment by Industry: 1969-1989* (time series data diskette)(miscellaneous years).

U.S. Department of Commerce, *Survey of Current Business* (miscellaneous dates).

U. S. Department of Labor, Bureau of Labor Statistics, *BLS Monthly Report on Employment, Hours, and Earnings, Series No. S0-235* (reports covering Colorado, Indiana, Missouri, and Mississippi for selected calendar quarters).

U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Price Index for All Urban Consumers (CPI-U), U.S. City Average* (unpublished data available from Boston Regional Office, U.S. Department of Labor, 1988).

U. S. Department of Labor, Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment* (miscellaneous years).

U. S. Department of Labor, Bureau of Labor Statistics, *Mississippi ES-202, Employment and Wages* (miscellaneous data files, 1980 - 1987).

U.S. Department of Labor, Bureau of Labor Statistics, *Monthly Labor Review*, *Table 31* (miscellaneous dates).

THE JFF EMPLOYER SURVEYS

JFF conducted employer surveys in four states: Missouri, Colorado, Mississippi, and Indiana. The purpose of the employer surveys was threefold: (a) to gauge employers' awareness of and attitudes toward workforce development issues generally; (b) to determine the quantity and quality of education and training provided to workers by employers; and (c) to gauge employers' attitudes toward public education and training resources.

It should be noted that this survey, completed by a self-selected 10 percent of firms sampled, was not scientific. While the surveys returned accurately represent the industrial mix of the state, the 10 percent of employers who took the time to complete them represent a more motivated and interested sampling of the states employers. Given that this sample represents employers who may be more inclined than average to deal with these issues—if anything, the lack of human capital investment the surveys reveal is understated.

JFF used the surveys to explore the differing weights employers gave to skill development, the nature of skills desired in the workforce, the utility of public institutions in providing education and training, and the amount and character of company training investment. They clarify the attitudes and practices of employers to which a public workforce policy must respond—even if these employers are the "cream of the crop." The most useful comparisons for state policy development are the relative differences within the survey sample.

The following summary highlights similarities and differences across the four states based on survey findings. This section is organized into four parts: (1) general findings; (2) workforce issues in the labor market across four states; (3) education and training practices across four states; and (4) survey methodology.

Survey Methodology

The employer survey was mailed to 10,000 Colorado and Missouri firms and 8,000 Mississippi firms sampled from each state's Department of Employment Security's database of employers participating in the unemployment compensation program. In each state the sampling included 100 percent of firms that employ at least 100 workers, no firms that employed five or fewer employees, and a random selection of all remaining firms. In Colorado there were approximately 1,206 useable responses; in Missouri there were approximately 850 useable responses; and in Mississippi there were approximately 840 responses.

In Indiana the employer survey was sent to 7,000 firms - 4,000 manufacturing firms and 3,000 service firms–whose addresses were obtained through Harris Publishing Company. For manufacturing firms, the sampling included 100 percent of firms that employ at least 100 workers, no firms that employ five or less employees, and a random selection of all remaining firms. No firm size breakdown was obtained for service firms.

Firm Size

In general the firms that responded to the survey are representative of the mix of firm by size in each state.

Missouri. The greatest proportion of large firms responded to the Missouri survey. 35 percent of survey respondents had over 100 employees; 25 percent of respondents had between 11 and 100 employees; and 40 percent of respondents had under 10 employees.

Colorado. Colorado had the greatest proportion of small firms by far, fully 71 percent of all survey respondents in Colorado were firms with under 10 employees; 20 percent of firms had 11-49 employees; and only 9 percent of firms had over 50 employees.

Indiana. Responses from Indiana firms were the most evenly distributed across firm size: 32 percent of firms had under 10 employees; 38 percent of firms had between 11 and 51 employees; and 30 percent of firms had over 51 employees.

Mississippi. The greatest number of medium size firms responded to the Mississippi survey: 22 percent of firms had under 10 employees; 66 percent had between 10 and 100 employees; and 12 percent had over 100 employees.

Industrial Structure

With the exception of Indiana, the firms that responded to the employer survey are fairly representative of the industrial sector mix of each state. Colorado and Missouri are largely service economies with small manufacturing bases. Indiana and Mississippi, on the other hand, are primarily manufacturing states with relatively underdeveloped service economies relative to the rest of the nation. The Indiana data is the most distorted due to sampling methods. JFF intentionally over-sampled manufacturing firms in Indiana because the state is so dependent on manufacturing for its economic health.

Missouri. Approximately 40 percent of survey respondents were service firms; 20 percent were manufacturing firms; and 20 percent were retail and wholesale trade firms. The approximate employment mix in Missouri is: 30 percent service; 25 percent trade; 18 percent manufacturing.

Colorado. Approximately 41 percent of survey respondents were service firms; 15 percent were retail and wholesale trade firms; and 13 percent were manufacturing firms. The approximate employment mix in Colorado is: 24 percent service; 25 percent trade; 13 percent manufacturing.

Indiana. Approximately 73 percent of respondents were manufacturing firms; 13 percent were service firms; and 7 percent were retail and wholesale trade firms. The approximate employment mix in Indiana is: 28 percent manufacturing; 24 percent service; 20 percent trade.

Mississippi. Approximately 24 percent of respondents were manufacturing firms; 24 percent were service firms; and 29 percent trade firms. The approximate employment mix in Mississippi is: 26 percent manufacturing; 28 percent service; 20 percent trade.

Survey Format

Many of the same questions were asked on all four surveys allowing for systematic comparison across the four states. However, each state's survey was tailored for that state--adding questions and deleting others. Hence, in some occasions comparisons can only be made between two or three states rather than for all four. The Missouri and Colorado surveys asked almost identical questions of firms. The Indiana and Mississippi surveys had somewhat different formats due to JFF's interest in specific issues affecting firms in those states.

General Findings

States Face Similar Workforce Challenges.

The survey data reveal that firms in states as geographically diverse as Indiana, Colorado, Mississippi, and Missouri share similar challenges and concerns regarding workforce development issues. Firms in all states cite considerable difficulty with labor quality, labor availability, and the cost of training and retraining employees. Investments in training vary considerably across states, however. States characterized by a preponderance of large firms and manufacturing firms invest more resources in training than states characterized by a preponderance of small firms and service firms.

Training investments vary by firm size and industrial sector in all states.

Discrepancies in education and training investments across states correspond to different mixes of firm size and industrial sectors. The survey data consistently revealed that firms with over 250 employees are more innovative with respect to education and training than small firms. Large firms are more likely to offer tuition reimbursement and developmental training to employees than small firms. Large firms also offer more informal on-the-job training, formal in-house training, and outside training courses to employees than small firms. Hence, in Missouri, where a third of the state's firms employ over 100 people, employees receive considerably more training than in Colorado, where the average firm employs under 10 people.

Similarly, JFF's survey research revealed that manufacturing firms as well as finance and transportation, communication, and utilities tend to invest greater resources in education and training than firms in the service, trade, and construction sectors of the economy. Hence, in a state like Indiana where a third of the population is employed in manufacturing, more people receive training than in a state like Colorado where only 15 percent of the population is employed in manufacturing.

Large firms in all states have more innovative business practices than small firms.

In Colorado and Missouri, 70 to 80 percent of firms with over 250 employees believe they are innovative when it comes to developing new products. Similarly, 50 to 60 percent of large firms in theses two states use highly advanced production processes and believe they are innovative in marketing products. In Missouri, for example, 72 percent of all firms use programmable controllers; 63 percent of firms use statistical process control; and 61 percent of firms use computer-aided design.

Firms in manufacturing, finance, transportation, and communication have more innovative business practices than firms in construction, trade, and services in all states.

In general, manufacturing, finance, and TCPU firms have experienced greater changes in the organization of production as a result of new technologies than firms in other industrial sectors. These firms face greater pressure to upgrade production processes than firms in the construction, trade, and service industries which tend to be labor intensive and less dependent on technological development.

Levels of innovation vary by state, however. Colorado has a small manufacturing sector but manufacturing is concentrated in large, high-tech firms that use highly advanced production technologies. Mississippi, on the other hand, has a large labor-intensive manufacturing sector. Few firms in Mississippi have implemented advanced production processes. For example, only 20 percent of Mississippi firms use computer-aided design and only 17 percent use statistical process control.

Improving job-specific skills is the number one reason for providing education and training in all states.

The kind of education and training firms provide is remarkably consistent across states. The majority of training in firms in all states is targeted to job specific skills despite employers' belief that most workers' job specific skills are adequate or better. It is the exceptional firm that invests in remedial training, though many firms cite reading, writing, and math deficiencies in their semi-skilled labor force (see **Table One**).

Employers in all states prefer in-house training to outside sources.

Also remarkable is the degree to which employers in all states prefer in-house training and training delivered by private sources to public training sources. Approximately 80 percent of employers in all states say that informal, in-house, on-the-job training is a very important source of training for their firm. In vivid contrast, roughly 20 percent of employers in all states view courses outside the firm and apprenticeship programs as very important sources of training for their firm (see **Table Two**).

Table One
Most Common Reason Firms Provide Training

	Indiana	Colorado	Missouri
Job specific skills	77%	75%	70%
New technologies	21	7	11
Certification/licensing	14	2	10
Preparing for promotion of new occupation	7	3	3
Fringe benefit	4	2	2
To enhance reading and writing	2	3	1
Reward for good performance	5	2	5

Source: Jobs for the Future Employer Surveys - Indiana, Colorado, Missouri

---

Employers do not turn to public education and training programs when they seek outside help.

Despite concerns about the cost of training and retraining workers, employers are reluctant to pursue cost effective public education and training resources. Employers in all states are more

---

Table Two
Value of Training to Company
Percent of Firms Responding "Very Important"

	Indiana	Colorado	Mississippi	Missouri
Informal learning (OJT)	92%	80%	88%	85%
Formal training (in-house)	44	41	49	52
Job rotation	31	18	26	25
4-year colleges and universities	15	--	23	--
Apprenticeships	20	17	21	21
Courses outside the firm	19	19	25	21
Computer aided instruction	16	15	20	--
Vocational schools	13	--	15	--
Community colleges	8	--	4	--
Private preparatory schools	--	4	--	5

Source: Jobs For the Future Employer Surveys - Indiana, Colorado, Mississippi, Missouri comfortable with private training sources such as vendors, consultants, trade and professional groups than they are with public training sources such as community colleges, vocational-technical schools, and state customized training programs (see **Table Three**).

Table Three
Training Sources of Firms (Within the Past Five years)
Percent of Firms Responding "Yes"

	Indiana	Colorado	Mississippi	Missouri
In-house training/staff	59%	74%	75%	85%
Trade or professional group	34	58	48	40
Consultants	39	40	40	43
Vendors	34	44	52	45
4-year college and universities	28	27	29	32
Secondary vocational schools	26	20	20	31
Technical, junior,or community college	25	16	33	38
Adult education	26	23	13	18
Apprenticeships	17	20	20	21
Chambers of commerce	20	19	18	7
Private industry council	13	9	10	12
State customized training	5	7	7	7
Labor unions	3	3	2	5
Local community organizations	13	25	17	16
Proprietary schools	5	8	19	17

Source: Jobs For the Future Employer Surveys - Indiana, Colorado,Mississippi, Missouri

Employers in all states don't solve the problems they identify.

One of the most striking findings that emerged from the survey data is a gap between theory and practice among employers in all states. While firms in different states are aware of the economic changes taking place around them and of the impact these changes are having on labor markets and skill levels, few firms have committed themselves to action.

Employers in all states realize that the workforce challenges they face today will only intensify in the years to come. Many employers anticipate labor shortages in critical occupations and many report workforce skill deficiencies in precisely those areas that will be more important in the future workplace—communication, problem solving, and prioritizing. Yet few firms are taking the necessary steps to ensure a competitive workforce for the future. A few examples help illustrate the discrepancy between what firms think and what they do.

- Two thirds or more of employers in all states say education and training is a good or excellent investment of company resources, yet the majority of firms interviewed spend less than $5,000 annually on education and training.
- Employers across all four states felt that workers lacked skills in areas such as setting priorities, problem solving, and communicating effectively, yet the majority of training in all firms revolves around job-specific skills.
- Employers cite the greatest skill deficiencies among their semi-skilled workers, yet the majority of training in firms in all states goes to managers and professionals.
- Firms in all states experience considerable difficulty hiring skilled craft workers yet few firms develop skilled workers in-house.
- Firms are concerned about the costs of education and training, but employers in all states utilize private training sources to a much greater extent than public training sources.

Workforce Issues in the Labor Force

Labor quality is the greatest workforce problem for firms in each state.

Overall, the most common obstacle to growth for firms in all four JFF states is labor quality (see **Table Four**). Nearly half of all firms in Missouri and Mississippi cite labor quality as a serious problem for business growth, while 41 percent of Colorado firms do. Other serious problems include government regulation and taxes; labor availability; the cost of training and retraining the labor force; and general labor costs.

Table Four
Percent of Firms Reporting Challenges that Affect Growth–Top Concerns

	Missouri	Colorado	Mississippi
Labor quality	47%	41%	47%
Govt. regulation	46	–	51
Labor availability	46	27	30
Cost of training	37	37	37
Labor cost	34	28	30

Source: Jobs for the Future Employer Surveys - Missouri, Colorado, Mississippi

International competition is not viewed as a serious threat to future growth by firms in any state.

Surprisingly, international competition is of little concern to employers in all four JFF states. International competition ranked last on the list of serious problems for business growth in all states. In Mississippi and Indiana, less than 1 percent of firms felt international competition was a serious problem. This finding is particularly surprising in Indiana, a state whose manufacturing sector is dominated by heavy industry subject to competition from abroad.

Missouri firms are somewhat more concerned about international competition than other states. Eleven percent of Missouri firms cited international competition as a problem. The greater propensity of large firms to compete in the international market place may explain the relatively greater concern over international competition in Missouri.

A majority of firms believe technology has had a large impact on the structure of their workforce.

Technology has created new jobs. Less than 10 percent of firms in both states feel technology has decreased skill requirements or abolished job categories (see **Table Five**).

Table Five
Firms' Perceived Impact of Technological Change On the Workforce in the Past Three Years?

	Colorado	Indiana
Little impact	44%	35%
Created new jobs	13	16
Increased skill requirements	43	39
Decreased skill requirements	2	3
Abolished job categories	6	3
Don't know	8	3

Source: Jobs for the Future Employer Surveys - Colorado, Indiana

---

Skill deficiencies are greatest among semi-skilled workers in all states, but employees in all occupational groups in each state could benefit from "new basic skills" training.

Skill deficiencies are most glaring among the semi-skilled labor force in all states. Firms report that semi-skilled workers are deficient in "new basic skills" of computer skills, math skills, communication skills and problem solving skills (see **Table Six**). Indiana and Missouri report considerably greater skill deficiency in their semi-skilled labor force than Colorado and

BEST COPY AVAILABLE

Mississippi. Firms in all states are most satisfied with the job-specific skills of their employees.

Firms in all states rate the skills of the managerial and professional workforce highest of all occupational groups. However, most employers feel that even these groups could benefit from further training in computer skills, communication skills, and leadership skills. In Indiana, for example, 73 percent of firms say that courses in computer literacy are the highest education and training priority in the next three years.

Across the board, large firms are more critical of their workers' skills in all occupations than small firms. Missouri firms' propensity to criticize workers' skills may reflect the high proportion of large firms in the state.

Firms in all states are experiencing difficulty hiring and recruiting skilled production workers and technicians.

Labor shortages are the most severe in Indiana and Mississippi. Over 80 percent of Indiana firms report difficulty hiring and retaining skilled craft workers and technicians. In Mississippi, 83 percent of firms report difficulty hiring qualified technicians, and 77 percent report difficulty hiring qualified skilled craft and production workers.

Table Six
Firms' Assessments of the Adequacy of Various Groups of Workers
Percent of Firms Responding "Poor" or "Fair"

	Semi-skilled		Skilled		Professional		Managerial	
	IN	CO	IN	CO	IN	CO	IN	CO
Reading	35%	35%	12%	14%	3%	7%	2%	4%
Math	45	40	13	21	5	11	3	7
Computer	62	53	43	30	21	31	24	28
Communication	50	38	24	23	12	18	10	11
Job specific	25	18	7	11	5	5	4	6
Problem solving	57	38	20	25	9	14	6	11
Adapt and learn	30	29	11	17	7	10	3	8
Attitude	28	28	11	16	6	12	2	9
Teamwork	25	25	12	15	7	12	5	11

Source: JFF Employer Surveys - Indiana, Colorado

Despite the overall decline in manufacturing employment, JFF discovered that manufacturing industries across the country are experiencing a dearth of qualified craft workers and technicians (see **Table Seven**). Many skilled craft workers are hitting retirement age and training for skilled craft positions can take several years. These two factors combined are contributing to labor shortages in this area throughout the country. In addition, technological change has contributed to demand for new technical skills in many manufacturing workplaces which has generated an increased demand for technicians.

In Indiana, manufacturing firms experience particular difficulty hiring qualified machinists, mechanics, and tool and die makers. The glaring lack of skilled production workers reported by Indiana firms reflects in part the high proportion of manufacturing firms that responded to the survey there. In many cases, the jobs Indiana firms have the most difficulty filling are precisely those jobs employers cite as most critical for production. This trend will only worsen as many of the state's qualified craft workers near retirement.

Colorado and Missouri experience less difficulty hiring qualified craft workers and technicians, though the difficulty is still considerable. Between 50 and 60 percent of firms in both states report difficulty hiring and retaining qualified workers in these areas.

Firms in all four states also report difficulty recruiting and hiring qualified managers, professionals, and sales employees. Nearly half of all firms report difficulty in these areas. Overall, firms in all states report the least difficulty hiring semi-skilled and clerical workers.

Table Seven
Firms' Difficulty in Recruiting and Hiring Qualified Workers
Percent of Firms Reporting "Much" or "Same"

	CO	MO	MS	IN
Managers	45%	57%	66%	58%
Professionals	50	62	66	--
Technicians	53	64	83	72
Skilled Craft	56	60	70	77
Operator/Fabricator	44	43	53	55
Clerical/Administrative	43	38	47	--
Sales and Marketing	52	54	64	--
Service	45	51	52	55

Source: Jobs for the Future Employer Surveys - Colorado, Missouri, Mississippi, and Indiana

Education and Training Practices Across Four States

The proportion of firms that offer formal training varies enormously by state.

In large part, the percentage of firms that offer formal training in a state reflects the proportion of large firms in the state. Large firms are much more likely to offer formal training to their employees than small firms. Hence, the large proportion of Missouri firms offering formal training to employees reflects the greater proportion of large firms in the state. Similarly, the relatively low percentage of firms offering formal training in Colorado reflects the greater proportion of small firms in the state (see **Table Eight**).

Table Eight
Percent of Firms Offering Formal Training

Missouri	69%
Mississippi	60
Indiana	55
Colorado	48

Source: Jobs For the Future Employer Surveys - Mississippi, Missouri, Indiana, Colorado

In all states, the likelihood that an employee will receive training, and the number of hours an employee spends in training, is related to occupational status.

Just because a firm offers formal training does not mean all employees receive training. In all states, professionals, sales and marketing employees, and managers are the most likely to receive training. Front-line production, clerical and service workers are the least likely to receive training of all employees.

The amount of time employees spend in formal training varies by state. The majority of all employees in Missouri firms receive some formal training. In addition, a much greater proportion of skilled, semi-skilled, clerical, and service workers receive formal training in Missouri than in other states.

Indiana firms provide the least amount of formal training to employees overall. Indiana firms provide employees with less time in formal training than Colorado firms despite the higher proportion of firms that offer formal training overall. For example, in Indiana, only 36 percent of firms report that all managers receive formal training and only 10 percent of firms report that all service workers receive formal training. In contrast, 49 percent of Colorado firms report that all managers receive formal training and 36 percent of firms report that all service workers receive formal training.

The majority of firms in all states spend less than $5,000 annually on training of employees.

Three quarters of employers in all states say that training is a good to excellent investment of company resources. In practice, however, few firms invest significant company resources in education and training programs.

Missouri firms invest the greatest amount of money in education and training programs. Approximately 1/3 of Missouri firms responding to the employer survey reported education and training budgets of over $20,000 annually; 20 percent of firms spent between $5,000 and $20,000 and 50 percent of firms spent less than $5,000 annually. Missouri stands in contrast to Colorado where 61 percent of firms spent under $1,000 annually on training. Only 6 percent of Colorado firms surveyed had annual budgets over $25,000.

Investments in formal training reflect firm size to a great extent, however, and Missouri has more large firms than Colorado. Large firms that offer formal training to employees invest greater resources in training programs than small firms, due to a larger labor force. And large firms are more innovative with respect to education and training practices than small firms in general.

The most common reason for providing training in firms in all states is to improve job specific skills.

Over 70 percent of firms in Missouri and Colorado say that the main reason to provide training is to improve job specific skills. In contrast, however, only 40 percent of Indiana firms said job specific skills was the most common reason to provide training. New technology was the second most common reason for providing training in all states. And Colorado firms train more employees for new technologies than either Indiana or Missouri firms.

Informal in-house training is the most important type of training for employers in all states.

Over 80 percent of firms in Indiana, Missouri, and Colorado rank informal in-house training as very important. Formal training is also regarded as a very important source of training. Between 40 and 50 percent of firms in all three states regard formal training as very important.

Firms in all states prefer in-house sources of training to outside sources of training and private sources to public sources of training.

Only 10-20 percent of firms in all states view vocational-technical schools, community colleges and apprenticeship programs as very important sources of training. Private Industry Councils and State Customized Training Programs were viewed as important sources of training by even fewer firms. Public sources of training consistently ranked high in the "least important" source of training category. And public sources of training were graded lower by employers than private sources.

If firms use outside sources of training, they prefer private sources such as equipment vendors, trade and professional groups, and consultants to public training sources.

Firms in different states rely on different training sources: Missouri firms rely the most heavily on in-house staff; Colorado firms use the most trade and professional groups for training purposes; and Mississippi uses the most equipment vendors for training purposes. Mississippi and Missouri use community colleges as a training source much more frequently than firms in Colorado and Indiana; but Missouri and Indiana utilize vocational technical schools at higher rates than Mississippi and Colorado. All states utilize four year colleges at approximately the same rate.

Overall, firms in Missouri and Indiana rank all sources of training as more important than Colorado and Mississippi firms. This may be related to firm size and industrial structure. Large firms train more than small firms and thus may regard all forms of training as more important. Likewise, manufacturing firms provide more training than other industrial sectors in general and thus may view all forms of training as more Important.

Firms in all states are generally satisfied with existing training options but Mississippi and Indiana are the least satisfied.

Of all four states, Mississippi reports the highest degree of dissatisfaction with existing training options (see **Table Nine**). In Missouri and Colorado approximately 70 percent of firms say existing public and private training options meet their needs. In Mississippi, only 55 percent of firms are satisfied with existing options.

Indiana firms do not have very high opinions of the vocational-technical system in their state. Only half of Indiana firms feel secondary and post-secondary vocational-technical schools prepare students adequately for entry-level jobs and few firms felt that vocational-technical education prepared students for advancement. Despite their negative appraisal of the vocational-technical system's performance, Indiana firms utilize vocational school more than other states.

Table Nine
Firms' Satisfaction with Training Opportunities
Percent of Firms Responding in Each State

	MO	CO	IN	MS
Highly Satisfactory	10%	15%	6%	12%
Satisfactory	59	55	63	0
Unsatisfactory	14	10	15	33
Highly Unsatisfactory	3	2	4	11
No Opinion	12	17	11	43

Source: Jobs For the Future Employer Surveys - Missouri, Colorado, Indiana, Mississippi

---

Sources

Colorado Department of Labor and Employment & U. S. Department of Labor, Bureau of Labor Statistics, *Colorado ES-202, Employment and Wages* (miscellaneous data files, 1982 - 1988).

Jobs for Colorado's Future, ***Education and Training in the Colorado Economy*** (Fall 1989); Jobs for Missouri's Future, ***Education and Training in the Missouri Economy*** (Spring 1990); Jobs for Indiana's Future, *Education and Training in the Indiana Economy* (Spring 1989).

Missouri Department of Labor and Industrial Relations, Division of Employment Security & U. S. Department of Labor, Bureau of Labor Statistics, *Missouri ES-202, 1988 Employment and Wages* (July 1989).

U. S. Department of Labor, Bureau of Labor Statistics, *Mississippi ES-202, Employment and Wages* (miscellaneous data files, 1980 - 1987).

THE JFF WORKER SURVEYS

Jobs for the Future also conducted employee surveys in two states, Colorado and Missouri. The employee surveys served three main purposes. First, the surveys indicated workers' general attitudes about work and the future. Second, they provided an overview of workers' attitudes, experiences, and the obstacles they perceive to work-related education and training. Third, they provided a profile of workers in each state by gender, race, income, education, region, and company size. Surveys were not undertaken in several states due to budget and client preferences. Colorado and Missouri are a good cross-section of the American economy—representing a diverse array of occupations and industries. And there are significant differences in worker experience and attitudes between them.

The worker surveys indicate that most workers recognize they are in the midst of major economic change, and that they and their state face many challenges regarding work and the workplace. Many, but not all, workers are ready to address these challenges. Policy implications for how to improve the delivery of work-related training in both states emerged from workers' responses. Based on the survey results, JFF recommended ways to restructure and improve existing education and training efforts in each state.

JFF wrote detailed reports on the findings and policy implications from each worker survey. The following section highlights the similarities and contrasts between the Colorado and Missouri employee surveys. The section is organized into four parts: (a) methodology; (b) attitudes about work and the future; (c) attitudes, experiences, and obstacles regarding work-related learning; and, (d) a profile of Colorado and Missouri workers.

Methodology

The employee surveys in each state were conducted by telephone and do represent a scientific sample. The survey participants, half women and half men, selected through random digit dialing, were all at least eighteen years of age and were employed either full-time (82 percent of respondents) or half-time (18 percent of respondents).

Phone interviews in Colorado were conducted by Talmey Research and Associates during June of 1989. Missouri interviews were conducted by Thies Market Research during January of 1990.

The survey instrument was designed by JFF in consultation with Steven Soldz, a clinical psychologist associated with the Harvard University School of Medicine, and Paul Talmey, of Talmey Research and Strategy, Inc., (Boulder, CO). Survey statistics were analyzed for Jobs for the Future, Inc., by Steven Soldz. The survey has a sampling error of plus or minus four percentage points.

A Profile of Missouri and Colorado Workers

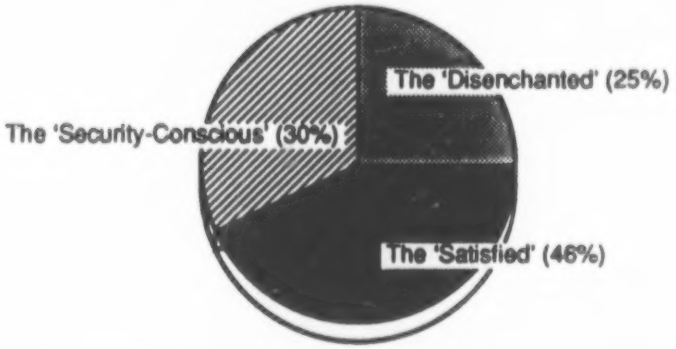
In both states, responses to the worker survey were grouped into three clusters representing several general attitude factors. Cluster analysis is a statistical technique that forms a small number of subgroups (clusters) of individuals based on similarities in responses to a set of variables. In both states, workers fell into one of three clusters based on their responses to the survey. In Colorado, the three clusters included workers who we termed "the satisfied'; 'the security conscious'; and 'the disenchanted'. In Missouri, the three clusters were 'the satisfied'; workers who were not affected by recent technology; and 'the technologically threatened'. The differences in clusters between the two states reflect the variation in worker responses in each state.

The Colorado Clusters

- **The Satisfied.** These people (about 46 percent of respondents, see **Figure One**) are the most highly satisfied with their jobs and are least concerned about job security. They perceive the fewest obstacles to receiving training and are the least likely to report that they don't need training–yet they are also getting much of the training they feel they need or want.
- **The Security Conscious.** These workers (about 30 percent of the sample) are the least satisfied with their jobs and are most concerned about job security. They are the most likely to advocate state and corporate intervention to increase training. These people are in the middle in terms of perceiving obstacles to training and feeling negative about training programs.

Figure One

Colorado Worker 'Clusters'



Source: Jobs for the Future Worker Survey: Colorado, Stephen Soldz

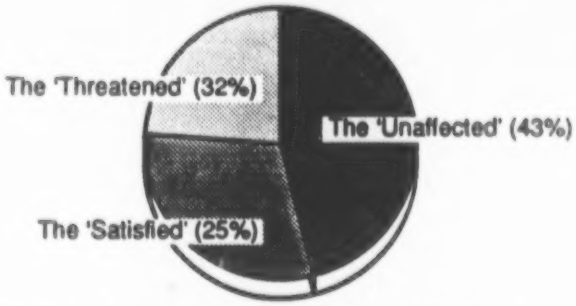
- **The Disenchanted.** This group (about 24 percent of respondents) is somewhat less motivated to obtain training. They are much more likely to view training as simply too difficult to obtain–for instance, that training costs too much money and takes too much time and energy. They are more likely to believe that they would attend training only if their employer required it.

The Missouri Clusters

- **Satisfied with Work.** This group, about 25 percent of the sample, is the most satisfied with their jobs (see **Figure Two**). They are by far the lowest in terms of valuing job security and job training, probably because they don't feel threatened by technology or workplace change. They are more likely to receive as much training as needed or desired, and perceive the fewest obstacles to getting the training they want. In general, this group is the most positive on attitude questions.
- **Not Affected by Recent Technology.** This group, about 43 percent of the sample, tends to be intermediate between Clusters 1 and 3 on most characteristics. Perhaps the most notable fact about them is that they are much less likely to have been affected by technological change than the other two groups. They appear to have a desire for more training, but are more likely than the first group to have to secure this training for themselves rather than have it provided by the employer.

Figure Two

Missouri Worker 'Clusters'



Source: Jobs for the Future Worker Survey: Missouri, Stephen Soldz

- **Technologically Threatened.** The most notable characteristic of this group, which makes up about 32 percent of the respondent sample, is that they feel that their jobs are threatened by recent technology, while feeling that technology has also reduced job opportunities. Perhaps not surprisingly, this group strongly values job security. They tend to be the most dissatisfied with their jobs. This group values training, but is the least likely to get needed training from employers and is the most likely group to perceive the cost of training as a major obstacle. These workers are the most cynical of the groups on virtually every question.

Comparing Colorado and Missouri Workers

A much higher proportion of Colorado workers are satisfied with their jobs than Missouri workers.

Significantly more Colorado workers are satisfied with their current status in the labor market than Missouri workers. In each state, "the satisfied" cluster consisted of those workers who are the most satisfied with their job and are the least concerned about job security and training. Workers who fall into this cluster are more likely than other workers to receive as much training as they need or desire; they also perceive the fewest obstacles to training. In Colorado, 46 percent of workers surveyed fell into this cluster whereas only 25 percent of Missouri workers did. In both states, workers who fell into this category were more likely to work in professional and managerial occupations.

Missouri workers feel more threatened by recent technological developments than Colorado workers.

Fully one-third of Missouri workers believe their jobs are threatened by recent technology. This group, the "technologically threatened" are the most concerned of all Missouri workers about job security. This group values training, but is the least likely to get needed training from employers and is the most likely group to perceive the cost of training as a major obstacle. This group tends to be the most dissatisfied with their jobs overall. Workers who fall into this group are more likely to have earned a high school diploma than a college degree and are more likely to work in blue-collar occupations than professional or managerial occupations.

Security conscious workers in Colorado have a more pro-active attitude toward education and training than security conscious workers in Missouri.

In Colorado, approximately 30 percent of workers fell into the "security conscious" cluster. These workers are the most concerned about job security; they are at high risk for job loss and are often stuck and bored in their present positions. However, these workers are enthusiastic about education and training. They are the most likely to advocate state and corporate intervention to increase training and 80 percent of them believe their employers should offer more education and training than they do. This group appears to form a natural constituency for job training programs. They give the impression that they would pursue education and training opportunities vigorously if they see a direct benefit between education and training and a promotion, a raise, or increased job security.

In both states, workers who are the least satisfied with their jobs and employers receive the least education and training and perceive the greatest obstacles to obtaining additional education and training.

In both states, those workers who were the least satisfied with their jobs were also the least likely of all workers to receive training and the most likely to perceive obstacles to further education and training. In Colorado, "the disenchanted" view training as simply difficult to obtain; they feel that training costs too much money and takes too much time and energy. Nearly one percent of all "disenchanted" Colorado workers said that education and training costs too much money. Similarly, in Missouri, approximately 70 percent of the "technologically threatened" cluster reported that cost was an obstacle to receiving additional education and training. In both states, workers who fell into these two categories felt that they, not their employers, would have to pay for any future job-related learning they received.

Attitudes About Work and the Future

On first glance, workers in Colorado and Missouri appear satisfied with their jobs and employers; beneath the surface, however, workers' concerns emerge.

When asked if they are satisfied with their job and employer, the majority of employees in both states said they are. Over 80 percent of workers in each state report that they feel they work for a good company; that they are satisfied with their jobs; that they are satisfied with the work that they do in their jobs; and that they believe they will be better off financially in five years. These findings are in direct contrast with the findings of the cluster analysis which shows that only half of Colorado workers and only one-quarter of Missouri workers are satisfied with their current job status. This discrepancy stems from the survey methodology.

Based on a series of questions related to job satisfaction including questions regarding mental stimulation, opportunities for advancement, and training, etc.. JFF determined that only half of all Colorado workers and one-fourth of Missouri workers fall into a worker cluster that can accurately be described as "satisfied." When probed, many workers may reveal dissatisfaction with their job status that goes undetected when they simply respond to a yes or no questions regarding job satisfaction. Hence, workers' initial responses to survey questions regarding job and employee satisfaction may not accurately portray their true feelings or situation.

This type of inconsistency shows up again when workers were asked to discuss their co-workers; in general, workers in both states appear to be less optimistic of their co-workers' situation than their own. In both states, those surveyed were less certain that their co-workers do their jobs well and have the opportunity to advance and be promoted than they do. In addition, workers in both states were apt to believe that the majority of workers at their place of employment were overqualified for and bored with their job. These responses do not correspond to the finding that approximately 80 percent of workers are satisfied with their job status.

Colorado and Missouri workers face similar workforce challenges.

- Nearly two-thirds of those surveyed in both states feel technology has greatly affected their jobs over the last few years.
- Approximately 90 percent of workers in both states feel that jobs today require a lot more training and education than just a few years ago.
- Three quarters of workers in both states believe pride in one's work has been decreasing over the past few years.
- Approximately 40 percent of workers in both states believe the people where they work are bored with their jobs. Approximately the same proportion believe that many people where they work have far more education, experience, and ability than their job requires.
- Approximately 70 percent of workers feel that it takes a person who has just lost a job 6 months or more to find a job as good or better.

In this period of economic change, workers in both states place a high value on security.

Consistent with the findings of the cluster analysis, approximately half of all workers surveyed in each state say that job security is more important than the opportunity for advancement on the job. Approximately half of all workers also report that they would like to work for the same employer over the course of their career—either doing the same type of work or doing different work.

In both states, having a good salary, medical benefits, and job security were the most important attributes in defining a good job. Other job characteristics such as opportunity for advancement, flexible work hours, job training, and child care, which are often viewed as being essential to workers, ranked much lower.

The majority of workers in both states are committed to the work ethic.

Seventy-one percent of Missourians and 65 percent of Coloradans report that they are committed to both their job and their employer. Only 5 percent of Missouri workers and 7 percent of Colorado workers say they do not feel a deep commitment either to their work or their employer. In both states, approximately three-quarters of those surveyed feel that it is worth being paid a "bit less" in a job if the job allows you to learn new things.

Attitudes, Obstacles, and Experiences Regarding Work-Related Learning

All workers believe that training and education are needed to keep up in today's economy, but Colorado workers are more receptive to the idea of education and training than Missouri workers. The survey data revealed somewhat different attitudes regarding work-related learning among Colorado and Missouri workers. In general, Colorado workers are more receptive to the idea of receiving job, career, or employment related training or education in the future than Missouri workers. Colorado workers are more likely than Missouri workers to think training is important for new job opportunities; they are more willing to foot the bill for their own training; and they are more likely to pursue education and training on their own time.

While 77 percent of Colorado workers report that they would like some form of job-related training in the future, only 63 percent of Missouri workers felt this way. Of those workers who have not received any training in the past five years, 70 percent of Coloradans wanted to receive training whereas only 53 percent of Missourians did.

Similarly, more Colorado workers than Missouri workers believe they will need additional training or education in the next few years just to keep the job they have now. Forty-three percent of Colorado workers feel they will need education and training in the future to keep their current job compared to 35 percent of Missouri workers. In addition, more Colorado workers believe that they will have opportunities to use what they learn in job training.

In both states roughly one quarter of all workers felt they needed more training in reading, writing, and arithmetic to do their current job better.

More Colorado workers have had experiences with education and training than Missouri workers.

Close to 80 percent of Colorado workers say that they have had some experience with training compared to 68 percent of Missouri workers which may explain their more positive attitude towards future training. In both states, most workers had received training through trade or professional groups. Four year colleges and universities, community and technical colleges, and local community organizations were also institutions through which many workers have received training (see **Table One**).

In both states, four year colleges and universities were considered "extremely useful" for training purposes by the highest proportion of workers.

Among those workers who want some form of job or employment-related training in the future, the most desired form of training is business courses.

In both states, workers who would like to receive additional training mentioned business courses most often as their desired form of training. Business courses were followed by college, computer training, technical training, and health and nursing training (see **Table Two**).

Table One

Use of Training Resources for Work-Related Training

School/organization	**Missouri**	**Colorado**
Trade/professional group	47%	49%
4-year college/university	31	41
Community/technical college	34	32
Local community organization	23	25
Public school adult education	20	19
Private trade school	9	12
Chamber of Commerce	3	8
Labor organization	6	6

Source: Jobs For the Future Worker Surveys - Missouri and Colorado

Table Two

Desired Forms of Training

Training Area	Missouri	Colorado
Business courses	16%	22%
College	13	17
Computer training	24	14
Health/nursing	7	11
Technical training	14	10
Arts	1	3
Law	2	3
Science	2	2
MBA	6	1

Source: Jobs for the Future Worker Surveys, Missouri and Colorado

Many workers feel new job opportunities will require additional training.

More Colorado workers (73 percent) than Missouri workers (60 percent) believe that in the next few years there will be a job they would like to have and can get under the right circumstances. In both states, however, 70 percent of those who believe this way also feel that they will need some sort of additional training to get that job.

The majority of workers in both states say that the primary reason they attended their most recent training seminar or class was to perform their current job better. However, approximately 20 percent of these workers said they took their most recent course to advance their career or increase their job opportunities.

Workers prefer certain methods of work-related learning over others and tend to prefer more formal methods that are used less often by employers.

Formal education and training at the work place is the most popular form of work-related learning among both Colorado and Missouri workers. Fully 80 percent of workers in both states said that formal programs at work are a good or excellent method for learning (see **Table Three**).

Many workers feel new job opportunities will require additional training.

More Colorado workers (73 percent) than Missouri workers (60 percent) believe that in the next few years there will be a job they would like to have and can get under the right circumstances. In both states, however, 70 percent of those who believe this way also feel that they will need some sort of additional training to get that job.

More Colorado workers (73 percent) than Missouri workers (63 percent) reported that formal programs away from work, such as adult education classes, are a good to excellent method for learning. More Colorado workers also felt that learning from co-workers was a good to excellent method of learning. These trends may reflect Colorado workers' more proactive approach to education and training issues.

Table Three
Workers' Preferences on Ways to Learn
Percentage of Workers responding "Excellent" or "Good"

	Missouri	**Colorado**
Informal training by supervisor	54%	48%
Learning from co-workers	60	63
Formal training at work	81	80
Formal training outside of work	81	73

Source: Jobs for the Future Worker Surveys, Missouri and Colorado

Based on their experiences, workers have a positive attitude toward training.

- Over 80 percent of workers in both states who had been in a training course or seminar over the past five years said that they are interested in having more job or employment-related training or courses.
- Over three-quarters of workers in both states felt that their most recent training experience was extremely or moderately useful in helping them perform their current job better.
- Over half of the workers in both states felt that their most current training experience was extremely or moderately useful to them in being promoted or opening up new job opportunities.

The greatest obstacle to receiving education and training inconvenient times and locations.

In both states, when workers were asked what they viewed as the greatest obstacles to education and training, the greatest number responded to "not offered at a convenient time or place". The second and third greatest obstacles were the cost of training and the lack of good programs. Other serious obstacles were lack of time and energy and lack of information about what kinds of programs are available (see **Table Four**).

Table Four
Obstacles to Training

(Percentage of respondents saying "very much" or "somewhat")

Total	Missouri	Colorado
Not offered at a convenient time or place	54%	64%
Costs too much	49	50
Good training programs not available	40	40
No time or energy	38	33
Don't know what's available	38	30
Know what's available, but not what to choose	33	30
Lack of child care	18	19
Lack of transportation	19	16

Source: Jobs For the Future Worker Surveys - Colorado and Missouri

Sources

Jobs for Colorado's Future, *Attitudes and Obstacles Concerning Work-Related Learning: A Survey of Colorado Workers* (prepared by Jobs for the Future, Inc.)(Fall 1989).

Jobs for Missouri's Future, *Attitudes and Obstacles Concerning Work-Related Learning: A Survey of Missouri Workers* (prepared by Jobs for the Future, Inc.)(Spring 1990).

EMPLOYER FIELD INTERVIEWS

While quantitative analysis is invaluable for developing an understanding of how employers and workers think about and react to economic change, numbers alone cannot capture the essence of the challenges employers and employees face on a daily basis. To understand these challenges, Jobs for the Future conducted field interviews in the three states of Indiana, Colorado, and Missouri. In each state, in-depth interviews were conducted with managers and employees in human resource, production, training, and personnel departments in firms representing the important industrial sectors of the state. JFF also conducted interviews with educators who specialized in employment and training issues.

In each state, the field work was tailored to fit the goals of the state programs. In Indiana, the field interviews tested the interaction of manufacturers with the vocational-technical system. In Colorado, the field work sought to capture the divergent training practices of high-tech "branch plants" and low-tech traditional industry, and highlight "best practice" examples for other firms. In Missouri, the field work was narrowly geared to explore how the base of small- and medium-sized manufacturers, particularly in rural Missouri where these firms offer potential for growth, could improve their education and training practices. In Missouri, specific policy options were discussed with employers as well. Due to these differences much information from the interviews is comparable, and much is also unique to each state (see the methodology section at beginning of this chapter).

In general, the field interviews fleshed out many of the findings from the employer and worker surveys in qualitative terms, and provided JFF with a more comprehensive picture of the ways employers, workers, and educators think about economic development and workforce issues. Findings and policy implications that emerged from the fieldwork have informed many of the recommendations made in the state action plans.

The following section highlights findings from the JFF fieldwork in Indiana, Colorado, and Missouri.

Field Work Methodology

Firm Selection. Drawing on Department of Economic Development data for each SDA in the three states, JFF conducted regional industrial analyses. The regional industrial analyses helped JFF identify the key industries in the major geographic regions of each state. Based on this information, JFF determined which industries to target in the interview process. JFF used the Harris Directory of Manufacturers and the Harris Industrial Directory for each state to identify and contact specific firms.

The sampling of firms varied by state according to JFF's research focus in each state. In Indiana, JFF was primarily interested in manufacturing firms; in Colorado, JFF selected a cross-section of large branch plants and traditional manufacturers; and in Missouri, JFF focused on the potential of small- and medium-sized manufacturing firms that constituted a growth sector in several parts of the state.

The Interview Process. The object of the field interviews varied according to JFF's research goals in each state. In Indiana, JFF explored the relationship between the vocational education system and employers' training needs in depth; in Colorado, JFF explored the training practices of the largest employers in the state's most vital industries; and in Missouri, JFF tested various education and training public policy options with employers in the state's manufacturing sector.

JFF scheduled interviews with two or three individuals at each firm to capture the views of management as well as workers. Interviews lasted approximately one hour and were often supplemented by a tour of the firm. Interviews were conducted and written up by JFF staff.

Separate field interview guides were designed for each state in accordance with JFF's research objectives in each state. Each interviewer followed the interview guide as closely as possible to enable systematic comparison across firms.

Colorado Field Work

The majority of Colorado interviews were conducted at large manufacturing firms. Five of the eleven manufacturing interviews took place at large multi-national high-tech firms located or headquartered in Colorado. These firms were chosen because of their status as one of the largest employers in the state; their importance in defining the state's core industrial profile; their leading role in the national economy in confronting global competition and technological change; and their leadership in integrating competitive strategies with business organization, physical capital, and human resources.

The additional manufacturing interviews took place at two high-tech firms—one mature steel industry and three food processing plants. These firms represented medium to large employers located outside the major urban areas of the state. They also represented the diverse cross section of firms which characterize Colorado's manufacturing sector. The seven non-manufacturing firms interviewed were selected on the basis of the need to achieve a representative balance of Colorado employers and industries.

The Colorado interview guide was organized into five sections: (1) firm profile; (2) occupational and skill profile; (3) education and training provision; (4) training and organizational strategy; and (5) links to education providers. The interviews demonstrate that firms of all sizes in various sectors of the economy face difficult labor force challenges at both the low and high ends of the occupational spectrum.

JFF conducted one round of extensive employer interviews in Colorado in August, 1989. The Jobs for Colorado's Future interviews were conducted with managers and employees in human resource, production, training, and personnel departments in firms across the state, in order to document the ways innovative Colorado firms are coping with the dynamics of a rapidly changing labor market. The results of the interviews demonstrate the variety of ways

Colorado firms are integrating human resource investments with corporate and organizational strategies. They also reveal the lagging human investment practices of several traditional industry employees.

Employers' Workforce Challenges and Education and Training Practices

The performance of the semi-skilled workforce is particularly problematic for many Colorado companies. Many firms complain that their semi-skilled workers lack basic workplace skills such as reading, communication, and problem solving. Firms also complain that turnover among semi-skilled employees is extremely high, making investments in basic skills training impractical.

Colorado's large high-tech companies face stiff competition for high-skill employees. Many high-tech companies experience difficulty recruiting qualified professional workers—especially qualified female and minority engineers. This shortage has led many high-tech companies to conduct nation wide employee searches.

The formal and informal mechanisms a company has in place to deal with workplace challenges vary considerably by firm size, industrial sector, and technological sophistication. Our conversations with employers across the state indicate that these three factors, more than any others, appear to determine the scope of training within a company, as well as the resources allocated to human resource development. In general, large firms and firms with innovative production processes have the most elaborate education and training systems. This finding confirms information on firm size and innovation from the employer surveys.

The higher proportion of professional employees a company has, the more likely they are to invest in all segments of the labor force. JFF discovered that firms with a high proportion of professional workers provide more training to all workers than firms with predominantly semi-skilled workers.

Training programs within companies are stratified along occupational lines. Both the amount and kind of training an employee receives through a company is tied to occupational status. Several of the firms interviewed had two separate training tracks within a single education and training department: one for professional and managerial employees, and one for skilled and semi-skilled employees.

Factories of the Future: Colorado High-Tech Manufacturing

JFF interviewed many of Colorado's largest and most innovative high-tech manufacturing firms. Operating in increasingly competitive international markets, the state's largest and most technologically advanced manufacturing companies are flattening their management structures and reorganizing social and technological workplace practices to maintain a competitive edge.

Interviews at the state's largest high-tech firms reveal remarkably similar practices along managerial, organizational, and training lines. Several companies in the JFF sample were experimenting with new forms of workplace organization such as quality circles and just-in-time production schedules.

"People empowerment," "total quality management," "social-tech," and "philosophy change" are popular concepts at large, high-tech manufacturing firms throughout Colorado. Overall, changes in the social and technological organization of the workplace are increasing skill requirements for workers at all levels. As interdependence among work activities grows as a result of reorganization, high-tech employers need skilled, flexible workers with the ability to communicate effectively and solve problems. These changes, in turn, are having a profound impact on the way these companies view education and training.

"Education used to be the first thing to go in a budget crunch, today education is viewed as a major strategic advantage for the company." (Strategic planner, Storagetek) Today, engineers as well as production workers must be proficient in new production techniques and must be able to communicate and comprehend the changes taking place around them. Engineers must be able to write and communicate work plans clearly, and production workers must be able to interpret engineers' workplans and implement changes on the production line.

These changes have created demand for training in new production technologies such as Statistical Process Control, and CAD/CAM, as well as training in effective written and oral communication at the high-skill levels. Several firms also offer in-house English as a second language courses for production workers experiencing difficulty understanding work plans they receive from engineers and production managers.

Factory of the Future: Unisys

Unisys, a computer manufacturing plant in the South Front Range, is an archetype of the "factory of the future." The Pueblo plant of 630 full time employees manufactures avionic computers and devices for the Air Force and shipboard computers for the Navy.

Company philosophy. Unisys managers characterize themselves as "sharp and humanistic," the management style as "participative," and the management philosophy as "enlightened." Unisys managers describe the labor force as a "family" and take pride in the fact that all of the managers know the assemblers by name. Three union drives have been launched at Unisys by the UAW in the plant's five year history—all have failed.

Labor Force. Like many high-tech firms where skill levels have increased due to social and technological innovation, the Unisys labor force consists primarily of high skill and semi-skilled employees.

All high-skill employees (engineers, professional administrators, and managers) at Unisys have college degrees. Most semi-skilled employees (technicians, clericals, and assemblers) have high school degrees, and some have technical or AA degrees from vocational schools or community colleges.

Labor Availability. The company's greatest labor force problem stems from the lack of a labor pool already trained in electronics assembly. High school graduates have not developed the skills required for high-tech assembly such as reading, writing, and basic mathematics, which means that the company *always* has to train entry-level workers.

Labor Quality. Literacy is the greatest workforce problem Unisys faces—a significant proportion of the assembly work force experiences difficulty reading work instructions, writing, and solving simple math problems.

Education and Training. Education and training is a high priority at Unisys. The company is committed to promoting employees from within and encourages employees to pursue degree programs in order to move up the company ladder.

Unisys reimburses all employees in full for classes taken at outside educational institutions. The company spent approximately $100,000 on tuition subsidies alone in 1988. In all, the company spends between $750,000 and $1,000,000 annually on education and training.

Training Department. Like many innovative firms, the company's in-house training program is two-tiered with one track for high-skill employees and one for semi-skill employees.

In-house courses, workshops, and training sessions for managerial and professional staff are conducted by the organizational development department.

Unisys recruits all assemblers through the local JTPA program. High school graduates attend a two-week training course sponsored by JTPA and Pueblo Community College which familiarizes them with assembly principles. Once hired, assemblers receive an additional two weeks of on-the-job training to become certified in soldering.

The Finance Sector: Banking in Colorado

Industrial Structure. Paralleling developments in the manufacturing sector, competitive pressures in the finance industry have led many banks to implement comprehensive computer processing systems. New products and service delivery methods provide individual banks with a leading edge over competition and state-of-the-art technology is the key to maintaining this edge.

In general, automation of many banking tasks has increased the skill levels required for banking positions. Increasingly, employees at all levels need strong math skills. Because banking is a service industry, communication, interpersonal, and personal appearance skills are critical at both high and low ends of the occupational spectrum. Lenders as well as tellers must be able to deal graciously with customers.

Programmers and data processors are on the front line of technological change at First National. Computerized credit analyses developed by the bank's programmers have decreased the time lenders spend on the sales of loans to large businesses and middle-market customers.

First National Bank of Colorado, which employs 3000 Colorado residents in 21 offices across the state, has met these competitive pressures in part through an extensive education and training program.

Education and Training. Individual employee training needs are determined by formal job description. However, each employee undergoes an annual performance appraisal process at which point the evaluator recommends additional skills training. All officers, management, and professional staff are required to take a minimum of one education or training course per year to update knowledge and sharpen skills.

First National spends approximately $750,000 annually on education and training. The majority of this budget goes to outside education and training institutions and tuition reimbursement which is available to employees for work-related courses. The American Institute of Banking in Denver is First National's primary educational source.

In-house, development workshops, and management training seminars are split between company and employee time. All in-house clerical programs are held on company time, however. Informal training by supervisors is provided for all positions in the bank.

Labor Force Characteristics. The First National labor force is approximately 35 percent high-skill employees, 50 percent semi-skill employees, and 15 percent low-skill employees. All loan officers at the bank are college graduates with some accounting and math background. Computer programmers need developed math, logic, and analytic skills. Semi-skilled employees need math, reading, and spelling skills. A high school diploma is required for all bank jobs excluding cafeteria work. Seventy percent of the bank's employees are women and twenty-two percent are minorities.

Colorado Health Care: Rose Medical Center

Industrial Structure. Technological advances are restructuring the nature of jobs in the nation's health care industry. While health care facilities have always depended on a highly skilled labor force to deliver medical services to clients, the nature of many health care jobs is changing due to the current shortage of nurses and therapists throughout the nation. The health care shortage is generating increased interest in cross training and broadening the training and job design of health technicians where appropriate. As in the manufacturing and finance sectors, these changes highlight the importance of education and training in the field of health care.

With 1600 full time employees, Rose Medical is the fourth largest hospital in the Denver metropolitan area. Rose was recently purchased by a profit-oriented corporation. The change in ownership has contributed to reductions in the labor force and cost containment measures. Rose's Vice-President of Human Resources indicated that cost containment, not technological change, was largely responsible for the restructuring that has occurred at Rose over the past decade.

Labor Force Characteristics. Rose Medical Center's labor force is dominated by high-skill employees. All managers, supervisors, nurses, therapists, and some technicians are high-skill and represent 62 percent of the Center's labor force. Twenty-three percent of the labor force are semi-skill (clerical employees and some technicians) and 16 percent are low-skill (all service workers).

Labor Quality. Rose struggles with labor quality problems at the low end of the occupational spectrum—approximately 10 percent of low-skill workers at Rose are illiterate. According to the Vice President of Human Resources, illiteracy is usually detected in hazardous chemical training courses.

Illiteracy is a large concern at Rose Medical Center. Approximately 10 percent of the low-skill labor force is illiterate but low -skill workers need to read and comprehend English at the Medical Center to administer special diets to patients and to use chemicals properly.

Education and Training. Rose Medical Center has a strong orientation toward education and training. All members of the corporate, executive, and management staff are involved in planning and budgeting for education. Supervisors and managers sit on the Training Development Committee which examines different training issues. The committee is managed by the Vice President of Human Resources.

The following goals were stated at a recent strategic planning session attended by senior management at Rose Medical Center:

- *Integrate human resource issues;*
- *Training for all Rose employees;*
- *Determine where future workforce needs will be;*
- *Provide scholarships in labor shortage areas; and*
- *Foster and reinforce work-family balance.*

High-skill employees receive the most training at the Medical Center. Education and training for high-skill employees takes place both in-house and out-of-house.

Many of Rose's high-skill employees attend the University of Colorado's Health Science Center which is down the street from the Medical Center. Rose has developed an ongoing and mutually beneficial relationship with the University; medical students and faculty from the University serve as teaching affiliates at Rose, while many Rose employees pursue technical and medical degrees at the Health Science Center.

Medium- and low-skill workers receive in-house training. Clerical employees receive some formal training in professional development and office automation and technology. Low-skill employees receive informal supervisory and on-the job training.

Rose spent approximately $300,000 on education and training in 1988. One-third of the education and training budget was allocated for tuition reimbursement for high-skill employees. This budget excludes resources allocated to managerial training and nursing education.

The Food Processing Industry

Industrial Structure. The food processing industry represents low-tech manufacturing in Colorado's industrial landscape. Unlike high-tech manufacturing, which requires a highly skilled labor force and large investments in research, development, and new technologies, food processing is a labor intensive industry which requires very few skills. Jobs for Colorado's Future interviewed three firms in the food processing industry—two meatpacking plants and one tortilla factory.

Meatpacking. Colorado's beef processing plants are large employers with over 2000 employees each. Both meatpacking plants JCF interviewed are subsidiaries of national meatpacking companies.

The plants are combination slaughterhouses and fabrication plants. Cattle are slaughtered on one floor of the factory and sent to another floor for fabrication. Fabrication involves cutting meat into specific cuts, packaging it into vacuum-sealed bags, and boxing it for cold shipment. Five to ten years ago, meatpacking plants were primarily slaughterhouses that provided beef quarters to restaurants and grocery stores. Today, the plants produce over 300 different types of cut meat that are marketed under hundreds of different store labels.

Mexican Food Products. An increase in the demand for Mexican food products has contributed to the phenomenal growth at Candy's Tortilla factory in Pueblo. The tortilla factory has expanded from a mom and pop operation of 35 employees ten years ago to a company of 370 today. The firm produces tortillas, chips, taco shells, salsa, and bean and cheese dip. Candy's distributes to restaurants, cafeterias, and supermarkets in the Western states. The company has distribution centers in Colorado Springs, Denver, and Salt Lake City.

Labor Force Characteristics. Labor force characteristics and labor problems are remarkably similar in all three food processing firms: the vast majority of jobs in all three firms are low-skill; all three firms depend on the local labor market and hire low-skill workers with no previous experience in food processing; each firm utilizes migrant workers extensively; and each firm experiences remarkably high turnover rates among low-skill employees.

Turnover Rates. At Candy's Tortilla Factory in Pueblo, 70 percent of the labor force is low-skill and 90 percent of the low-skill labor force is Hispanic. Between January and July of 1989, half of the low-skill labor force at Candy's quit or was fired. Excel Meatpacking Company in Fort Morgan, experiences 100 percent annual turnover among low-skill employees. The company must hire 20 new low-skill employees each week in order to retain three or four that will stay longer than three months. Similarly, Monfort, Inc. (a meatpacking factory in Greeley) routinely hires 3.5 workers for every opening in order to fill a position. Most low-skill meatpacking workers leave within the first few weeks.

High turnover rates among low-skill employees is the greatest labor force problem facing food processing firms: meatpacking employers experience 100 percent turnover annually.

High turnover rates are the result of job dissatisfaction and poor working conditions. Low-skill jobs at food processing plants are repetitive and physically strenuous. Eight and ten hour shifts on the assembly line result in repetitive motion syndrome and injuries for many workers.

The Director of Human Resources at Candy's told JCF that production employees regularly twist, fall down, hurt their backs, and break fingers and ankles on the job. This factor is especially problematic for Candy's employees because the company does not provide health insurance until an employee has been with the company for 18 months.

Education and Training. Unlike innovative firms, managerial status is not necessarily equated with more training in food processing firms. Neither production workers nor managers receive extensive formal training in food processing firms and the vast majority of training for all employees is informal on-the-job training.

Meatpacking. The inherent dangers of working with knives make safety the number one education and training priority for meatpacking firms.

All new fabrication employees at Monfort spend the first day on the job in general safety classes. Workers are taught how to get their hands in shape for heavy lifting and repetitive cutting motions and then put immediately onto the line. Supervisors and fellow cutters provide on-line models and new workers gradually pick up speed making the cuts. The company holds regular shift and cutting line meetings to involve workers in identifying production problems and suggesting solutions.

Excel Meatpacking Company is in the process of implementing a three-week training program for entry level workers that involves orientation to the company and the union, a physical examination and drug test, and basic plant operations such as safety and emergency evacuation. Excel emphasizes safety and quality precautions from the beginning. For the first week, new fabricators are placed on the "mezzanine" where they learn knife sharpening techniques and practice making beef cuts.

Mexican Food Products. Production workers at Candy's tortilla factory spend two weeks alongside a co-worker to learn production techniques. Experienced production workers serve as trainers. During the two-week training period, the employees serving as trainers receive an increase their hourly wage.

EMPLOYERS AND EDUCATORS INTERVIEWED FOR COLORADO FIELD WORK

Manufacturing

Martin Marietta, Denver

Hewlett Packard, Loveland

Storage Technology, Louisville

Unisys Corp., Pueblo

Ball Aerospace, Broomfield

CF&I Steel Corporation

Dixon Instruments, Grand Junction

Coors Ceramics, Grand Junction

Pabco Insulation, Grand Junction

Candy's Tortilla Factory, Pueblo

Excell Meat Packing, Fort Morgan

Monfort, Inc., Greeley

Retail

King Soopers, Denver

City Market, Grand Junction

Finance

Colorado National Bank

Services

Rose Medical Center

Education

Dave Anderson, Dean, School of Industry and Technology and Dean, Director of Vocational and Technical Education, Mesa State College.

Indiana Fieldwork

JFF conducted two separate rounds of field work in Indiana. The first round, conducted in August of 1988, was a broad attempt to familiarize JFF staff with the ways employers and educators in the state think about employment and training issues generally. The vast majority of firm interviews were conducted with manufacturing firms due to Indiana's historic reliance on manufacturing employment. Educator interviews were conducted with the directors and deans of vocational and technical education at Indiana and Purdue Universities and with directors of secondary vocational-technical schools.

The second round of field interviews, conducted in February of 1989, consisted of a series of focus groups with workers, and in-depth interviews with selected supervisors and human resource managers in manufacturing, finance, and health services. These interviews provided the qualitative foundation for a report on occupational analysis that JFF conducted for the Indiana Commission on Vocational and Technical Education (ICVTE). This report provided ICVTE with: (1) information on changing occupational skill requirements in the Indiana economy; (2) recommendations on how to perform useful occupational analysis; and (3) detailed analysis of occupations critical to Indiana's manufacturing and health service sectors including first-line supervisors and registered nurses, licensed practical nurses, and health technologists.

Jobs for the Future's work in Indiana was sponsored, in part, by the Indiana Commission on Vocational and Technical Education. As such, a large component of JFF's work in the state revolved around analyzing employer and employee needs and practices and developing information on the changing skill requirements in industries pivotal to Indiana's future. This information, gained in large part through field work, was necessary for thinking about how to strengthen the vocational learning system of the state.

Employers' Views on Critical Occupations and Changing Skill Requirements in the Indiana Economy

Indiana employers cited managers, engineers, and operators as the most "critical" occupations. Employers in manufacturing firms across the state agreed that these three occupations were the most critical to smooth operation. This set of occupations is consistent with the set identified as "critical" by educators, though vocational educators are not in the business of educating managers.

Employers don't feel workers understand how the economy is changing. Several employers felt that workers don't understand recent changes in jobs. They also felt that job losses were a result of structural change rather than cyclical change. Employers suggested that this lack of understanding contributes to inflexible attitudes on the part of workers.

Indiana employers want technical workers with strong interpersonal and problem-solving skills. Technical prowess is paramount in skilled manufacturing occupations; however, many employers noted that without communication and interpersonal skills, technicians and engineers would not be able to convince line workers that their ideas should be implemented.

Indiana employers want adaptable workers but feel many workers are resistant to change. Several employers said that workers' lack of adaptability inhibits company productivity. Many employees resist taking on new responsibilities that would contribute to more flexible production and teamwork. One human resource director said the largest personnel problem she faced was not being able to move her first-line supervisors to different locations in the plant.

Lack of basic skills is a serious problem in semi-skilled manufacturing occupations. One human resource director estimated that 25 percent of her company's operators have below a sixth grade reading level and that 50 percent have below a sixth grade math level. This lack of basic skills in the workplace makes it difficult to implement quality control.

Indiana employers don't feel the high school system adequately prepares young people for the work place. All the employers interviewed felt the high schools were inadequate; one personnel manager gave the system a D-, while others said that high schools failed to teach human skills of communications and interpersonal relations. By contrast, the Indiana Vocational and Technical College System (Ivy Tech) received more favorable reviews with an average grade of B.

Educators' Views on Critical Occupations and Changing Skill Requirements in the Indiana Economy

Educators see their greatest challenge to be convincing students of the importance of higher education. Because the Indiana economy has revolved around high-paying manufacturing jobs that do not require higher education, residents of the state have come to expect that a high school education will serve them well. Educators stressed the need to convey to students that today's manufacturing jobs require greater education levels than those of past decades.

There is a tension among educators regarding the role of vocational education—some educators gave job specific skills top priority while others gave general education top priority. The vast majority of educators cited "prepare people for employment" as their primary goal. However, many educators recognized that narrow vocationalism will not serve students in the long run. Vocational school and Ivy Tech directors stressed the importance of teaching students to think critically, to communicate effectively, and to deal with change. University educators suggested that the vocational system and Ivy Tech were too focused on job-specific skills.

Vocational educators feel that manufacturing occupations, particularly computer-based occupations, are the most critical to the future of the state's economy. Vocational educators were well aware that the increase in automated production processes has meant that most manufacturing workers need to develop some level of technical sophistication in their jobs. Ivy Tech representatives told JFF that the programs most in demand were in electronics and computer assisted manufacturing.

Very few formal channels exist for communication between educators and employers in the state. When asked how they decide what programs to offer, almost all educators mentioned some sort of "advisory board" that included local employers, but few educators specified other formal mechanisms for obtaining employer input into the curriculum development process. Several educators expressed a desire for more communication with employers. Of the educational institutions interviewed, Ivy Tech appeared to be the most responsive to employers' demands.

Some, but not all, educators anticipate changes in program curriculum because of economic change. Several educational institutions admitted that curriculum change is slowed by red tape and resource limitation. Others said that they have broadened their curriculum to place more emphasis on basic skills, computer, and nursing programs.

Jobs for Indiana's Future Occupational Analyses and Recommendations to the Indiana Commission on Vocational and Technical Education

Field interviews with employers and employees were a critical component in JFF's recommendations to the ICVTE regarding appropriate strategies for occupational analysis. Field interviews and review of the state's economy with knowledge of the strengths and weaknesses of various approaches to occupational analysis served as the basis of six recommendations JFF presented to the ICVTE regarding occupational analysis.

In particular, the Indiana field interviews helped JFF identify occupations at the "stress points" of the economy—those jobs in which new requirements are the most dramatic, or where the occupation is central to the continued competitiveness of the firm. Through field work, JFF identified first-line supervisors as a critical occupation in manufacturing, and registered nurses, licensed practical nurses, and medical technicians as critical occupations in the health care industry. JFF conducted detailed analyses of these occupations for the ICVTE to demonstrate the utility of both quantitative and qualitative methods in occupational analysis. To give an example of how such an analysis may result in focusing on different occupations than a more traditional approach might identify, JFF used these criteria to identify the 10 top-ranking occupations of concern for the ICVTE. They are:

- middle managers;
- first-line supervisors;
- sales agents;
- manufacturing engineers;
- mechanics;
- technicians;
- tool and die makers;

- machinists;
- registered nurses;
- licensed practical nurses;
- health technologists; and
- clerical and administrative support.

In comparison, reviewing the IDETS 1990 occupational forecast (1985 update) for occupations projected to have the highest demand—in volume—would have resulted in listing computer operatives, registered nurses, therapists, health technicians, technologists, dental hygienists, drafters, computer programmers, cashiers, secretaries, receptionists, machine tool operators, truck drivers, and science technologists. The Hudson Institute, in its report *Indiana's Vocational Education System* listed food service, health services, personal services, marketing, blue collar production workers, clerical occupations, and technicians as the primary occupations of vocational content. Occupations such as therapists (not strategically important to key industries) and food service workers (not particularly training intensive) do not rank on JFF's list as occupations central to the ICVTE's near-term focus.

EMPLOYERS AND EDUCATORS INTERVIEWED FOR INDIANA FIELD WORK

Potter and Brumfield, Princeton

Bristol-Myers, U.S. Pharmaceutical and Nutritional Group, Evansville

Chrysler, Kokomo

Eli Lilly—Chemicals Manufacturer, Lafayette

Allison (a subsidiary of General Motors), Kokomo

Electric Data Systems Corp. EDS, Indianapolis

Cummins Engines, Columbus

Northern Indiana Public Service Company (NIPSCO), Hammond

Education

Kent Eskridge, Vocational Director, Evansville/Vanderburgh School Corporation

Dr. Bill Spence, Dean of Occupational Education, Vincennes University

Dr. Victor Baldi, Vice-President, Ivy Tech, Evansville

Phil Nine, Director, Purdue University Statewide Technology, IUPUI, Columbus

Paul Bippen, Director IUPUI, Columbus

Ed Brown, Director Vocational Services, Ivy Tech, Lafayette

Jim Hickson, Central High Vocational School, Greenwood

FEBRUARY 1989

Manufacturing

Delco Electronics, Kokomo

Financial Services

Lafayette Life Insurance, Lafayette

First Federal Savings and Loan, Lafayette

Bank One, Lafayette

Health Services

Focus Group on Allied Health Occupations—human resource representatives from Methodist Hospital, St. Vincent's Hospital, Indiana University Medical Center, Indianapolis

Elizabeth Hospital, Lafayette

Wabash Valley Hospital

Arnett Clinic, Lafayette

School of Nursing, Purdue University

Education

Ivy Tech: Ken Martin, Interim Dean of Regional Operations, Dean of Instructional Operations

Rilyn Gipson, Director, Employment and Training Consortium

Neal Pedro, Director, Upper Wabash Vocational School

Missouri Field Work

JFF conducted one round of extensive employer interviews in Missouri in February of 1990. The central purpose of the Missouri field interviews was to test a number of different public policy options for improving education and training efforts of the public and private sectors. JMF sought employers' reactions to innovative education and training ideas such as work-based learning, the use of regional employment and training coordinators, and regional employer/education consortia. In particular, JMF targeted small- to medium-sized manufacturers who were viewed by JFF and the JMF advisory board as the prime audience for enhanced workforce preparation initiatives.

Missouri has a good mix of traditional manufacturers who potentially could serve as a growth sector—particularly in rural parts of the state. JMF incorporated the more general training concerns of large-scale manufacturers in a series of regional Congresses—including St. Louis and Kansas City. Employers' reactions to various policy proposals served as the basis for several discussions of Jobs for Missouri's Future Advisory Board regarding state policy options. Discussing education and training policy issues with employers also contributed to recommendations made in *Human Investment in Missouri*, a report written for the Missouri Office of Job Development and Training by Jobs for the Future.

The Missouri interview guide was organized into five sections: (1) firm background; (2) profile of the workforce; (3) the changing nature of Missouri's workforce; (4) education and training; and (5) evaluation of the current public education and training system.

The public policy innovations tested through the field interviews came under section five of the interview guide. In this section employers were asked to consider whether they would initiate or participate in certain public policy innovations to improve the quality of workers and education and training in their region. These policy proposals were selected for testing based on JFF's research of the education and training system in Missouri:

Work-based Learning. The idea behind work-based learning is to provide non-college bound youth with exposure to the workplace and to begin developing skills that would lead to a skilled career path. Employers were asked whether they would be willing to sponsor work-based learning programs in their firms. Participation in such a program would require employers to contract with local vocational technical schools on a regular basis for part-time workers. Vocational-technical students who meet certain grade requirements would be eligible for the work-based learning programs and would receive credit for their work experience.

Regional Industrial Education and Training Coordinators. Employers were asked whether a regional industrial coordinator who initiates, coordinates, and administrates employer training needs with appropriate educational and institutional services would be useful. The idea behind an industrial coordinator is to streamline the education and training system so that employers do not feel overwhelmed or uninformed regarding education and training options.

Information would be centralized making access to education and training resources simple and direct.

Regional Employer/Education Consortia. Employers were asked if they would consider participating in regularly scheduled meetings in their region where employers and vocational or community college administrators and educators meet to discuss regional employment and training needs regarding basic and job-specific skills. The idea behind the consortia is to coordinate curriculum design with employers' needs to meet the needs of students, workers, employers, and educators more effectively.

In addition to testing policy ideas, the Missouri field work helped JFF gauge the extent of skill deficiency and competency in the Missouri labor force; the extent of education and training in the private sector; and employers' attitudes toward and relationships to existing educational institutions.

Workforce Challenges Faced by Missouri Employers

Missouri employers face a severe shortage of skilled maintenance people, technicians, and mechanics. In conversations with employers throughout the state, the lack of skilled employees emerged as the greatest workforce problem firms face. From boat-building firms to poultry processing plants to dairy manufacturers, the lack of skilled workers is inhibiting productivity. Many firms are conducting statewide and beyond searches to fill their skilled positions.

Technological change is contributing to the lack of skilled labor in many Missouri firms. Several firms with which JFF spoke described how unskilled jobs were becoming skilled jobs because of the introduction of new technologies. In poultry processing, a rapidly growing industry in Missouri, the introduction of automated deboning machinery has created demand for mechanics, electrical technicians, and refrigeration technicians. But as one human resource director in a poultry processing plant told JFF, these positions are by far the most difficult to fill.

Many employers feel that the lack of community colleges in their area exacerbates the shortage in skilled labor. Community colleges in Missouri are clustered in the major metropolitan areas of St. Louis and Kansas City; hence, in several areas of the state, there are no community colleges. Several employers with whom JFF spoke felt that the lack of community colleges in their area left them with an under-skilled labor force. Employers said that college-bound students leave their home towns and the students who remain often do not complete high school.

Many employers depend on the secondary vocational technical system to train skilled workers. Many employers who need workers trained in basic technical skills depend on their area vocational-technical school for a supply of young workers with technical knowledge. Their assessment of this system is a "mixed bag." In particular, there are many strong schools, and many described as weak or irrelevant to firms' needs. Firms that require detailed knowledge of automated production processes felt that the vocational-technical schools were not particularly helpful with more advanced training because they do not have sophisticated enough equipment on which to train students.

In general, employers felt that education and training programs were haphazard and poorly organized and publicized. While employers were aware of many public education and training programs and opportunities, many suggested that the public education and training landscape is confusing. Many companies don't know where to go when they need training that they think they can find in the public system. In addition, the paperwork and time required to participate in state programs and receive state funds were an obstacle for many employers. Employers' impressions of the public education and training landscape were also confirmed by the discussion JFF held with educators.

Missouri employers said they don't have any problem filling low-skill, low-wage jobs. Employers suggested there is an over-supply of low-skill workers seeking employment. While semi-skilled and skilled positions go wanting, employers said that they receive hundreds of applications for routine manufacturing positions such as assembler. High school dropouts in particular seek entry-level manufacturing jobs in Missouri firms.

Illiteracy is a major concern in manufacturing industries with high proportions of low-skill workers. Many employers noted alarmingly high rates of illiteracy among their low-skill labor force. Because many firms don't require high school diplomas or administer competency tests upon hiring, the lack of basic reading and writing skills do not show up until workers are on the job. Several employers said illiteracy prevented workers from performing their basic job tasks competently, while others were concerned about workers not being able to read warning and hazardous material signs.

Employers' Reactions to Work-based Learning Initiatives

JFF tested employers' reactions to "apprenticeship-style" cooperative school/work learning arrangements as a means of meeting their skill needs. In general, employers' reactions to the idea of work-based learning were mixed. While some employers felt work-based learning programs could help them develop a supply of semi-skilled and skilled workers, others felt that high school students were simply too young and too immature to operate effectively in an industrial workplace.

The lack of skilled workers in many parts of the state made the idea of work-based learning and apprenticeship programs very appealing to many Missouri employers. Many employers saw work-based learning and apprenticeship programs as a way to develop future skilled workers. Instead of having to conduct extensive searches for skilled employees, several employers felt that work-based learning in conjunction with school learning would generate a qualified pool of entry-level technical workers. Employers disagreed, however, over whether work-based learning would work best with high school or college students.

Several employers said they would prefer to hire part-time employees from local universities or community colleges rather than high school students. Maturity was cited several times as a concern in hiring workers. Several employers felt that high school students simply lacked the maturity and responsibility to operate effectively in the workplace two or three days a week.

Employers said they would be much more comfortable with the idea of training someone who had already graduated from high school and had demonstrated a desire to learn and improve his or her skills by attending some sort of post-secondary institution.

Many employers were concerned about the liability issues involved in having teenagers in the workplace. While many employers thought that employing high school students on a part-time basis was a good idea, the majority of employers JFF spoke with were concerned with the liability issues involved in having teenagers in the workplace. Several employers felt that it would be hazardous to have high school students handling heavy machinery because they lack maturity. One employer suggested that if the state wanted to institutionalize work-based learning programs it should take on the liability responsibility associated with high risk levels in manufacturing. The liability issue emerged as employers' number one concern with respect to work-based learning programs.

In general, the jobs for which employers would be willing to hire high school students are not the kinds of jobs that would lead to career development or mastery of a craft. JFF found that the firms that would be willing to hire students are often firms that need routine tasks performed. The higher technology firms that place a high value on education are less likely to feel that students have the appropriate skills to perform tasks. Hence, firms that might participate in work-based learning programs might not be the best candidates for developing a work ethic or practical skills for "good" jobs.

Many employers questioned the efficiency of work-base learning for the firm because they felt that part-time employees are not a good investment. Several employers told JFF quite frankly that they would only consider work-based learning if the labor market became so tight that they couldn't hire workers any other way. In general, these employers felt that the investment the company would have to make in training a young part-time worker would simply not be worthwhile.

Employers' Reactions to Education and Training Coordinator Initiative

In general, employers were very enthusiastic about the idea of institutionalizing a role for an education and training coordinator in various regions of the state. The idea of a single information source for all education and training resources in a region struck employers as a much more efficient and practical method for pursuing education and training than that which currently exists.

Through interviews, JFF discovered that a number of informal regional education and training coordinators already exists in the state. However, each coordinator is affiliated with a different educational institution (generally a vocational-technical school or a community college) which makes the system confusing to employers.

According to one informal coordinator affiliated with Crowder Community College, the state's education and training system suffers from a lack of coordination. The coordinator told JFF that four regional education and training coordinators have been working throughout the state to match employers' training needs with public resources but that it is a very haphazard and poorly organized system that employers do not utilize. Regional coordinator positions are not institutionalized in a systematic way but emerge in different institutional settings as the need arises.

Employers expressed a desire for a more coordinated system. In general, employers expressed the following concerns regarding an education and training coordinator position:

Employers said they would be more likely to utilize state programs and apply for state customized training funds if they could depend on a reliable coordinator.

JFF sensed that many employers knew that state programs and funds existed to help them in the abstract but that they felt overwhelmed by the system and didn't know how to access it. The idea of vesting all of this information in one regional coordinator was very encouraging to many employers struggling with training issues.

Employers felt that education and training coordinators should be independent. In general, employers felt that education and training coordinators should *not* be affiliated with any particular educational institution. Employers want to make sure that the coordinator is objective and will recommend the best training resources for their needs.

Employers wanted an education and training coordinator familiar with private and public education and training resources. Another reason employers reject an education and training coordinators affiliated with a particular educational institution is that they want to know about private training options as well. High-tech companies in particular do not feel that public education and training resources have the appropriate technologies with which to train their workers.

Employers felt that an education and training coordinator should make quarterly visits to employers to let them know what training resources are available. All employers who favored the idea of an education and training coordinator felt that the coordinator should visit firms at least once a quarter and meet with the human resource and training directors.

Employers' Reactions To Regional Employer/Education Consortium

Employers responded positively to the idea of meeting regularly with other employers and education and training representatives in their region to meet common training needs. Employers felt that regular meetings could cut costs of training for all employers and also reduce overlap in terms of the courses and programs offered.

In general, it appeared that companies that were having difficulty meeting their training needs were more enthusiastic about the idea of working with other employers, than companies who were meeting their training needs through extensive in-house programs or companies who had very few training needs because of the preponderance of low-skill jobs in their firm.

Employers who had attended regional meetings in the past said that there was a high degree of territorialism. Many felt one prerequisite to successful employer consortium was for employers to understand the mutual benefit of devising collective solutions to common problems.

> JFF discovered a striking example of employers working together to meet common training needs in Lebanon, Missouri. In Lebanon, the shortage of skilled maintenance workers was so acute that employers teamed together to develop a maintenance training program so that companies "wouldn't keep stealing each other's maintenance people." Human resource directors from eight firms worked with the education and training coordinator for the vocational technical schools in Service Delivery 9 to secure state customized training funds for the program. The state provided 70 percent of the funding required to get the training program off the ground; the eight participating companies provided the additional 30%. The courses would run through the area vocational school and would focus on different aspects of repair work in an industrial setting. Once the program is running smoothly, any company in the area and any residents of the area would participate. Classes were scheduled to begin in fall of 1990. Lebanon employers hope that this education and training innovation would provide them with a skilled pool of maintenance workers from which to choose in the years to come.

EMPLOYERS AND EDUCATORS INTERVIEWED FOR MISSOURI FIELD WORK (partial list)

Paul Mueller Company, Springfield
Hudson Foods, Springfield
Zenith Corporation, Springfield
Wire Rope Co., St. Joseph
Mid-American Dairy, Springfield
Detroit Tool, Lebanon
Tracker Marine, Lebanon
Workwear Corp., Joplin
Alcan Cable, Sedalia
Kelsey-Hayes, Sedalia
ABB (Asea Brown Boveri, formerly Westinghouse Inc.), Jefferson City
Brown's Shoe Co., Owensville
Shirley Evans, Dean of State Fair Vocational Technical School, Sedalia
Nancy Jones, Industrial Coordinator, Crowder College, Neosho

THE JFF FOCUS GROUPS

The Purpose of Group Discussions

Group discussions—known to public attitude specialists as "focus groups"—are an ideal research tool for understanding how people think about issues. They provide an opportunity to engage people in conversation and to probe beneath the surface of people's opinions and identify underlying motivations and assumptions. Group discussions help identify the language people use to talk about specific topics, and how people react to various personal and policy options regarding substantive issues. Thus, it becomes possible to understand where people "start" a discussion on particular issues, uncover what they know and don't know about these issues, identify their perceptions and misperceptions, and determine areas where informational and emotional obstacles prevent them from seriously considering the issues and options for action. Moreover, group discussions reveal how people's views change as they have the opportunity to learn more about an issue, and to discuss it over time. Jobs for the Future's approach to group discussions throughout the states was to understand not only "what" people think about their role in a changing economy, but "how" and "why". These types of findings are difficult—if not impossible—to obtain from public opinion surveys.

The JFF focus groups were analyzed to reveal how people talk and think about economic and job-related issues in each state. The guideposts for this analysis were: (1) what are the points of consensus among the group participants; (2) what are the areas or topics of discussion where people clearly divide into groups with different points of view; (3) what are the informational or emotional obstacles that prevent people from seriously considering an issue and options for action.

Group Discussion Methodology

Focus groups were conducted in different regions of Indiana, Colorado, Missouri, and Mississippi. Participants included residents of rural, urban, and suburban areas and agricultural, manufacturing, and service sector employees. Each group discussion consisted of approximately 12 people representing a cross-section of the population of each region in terms of age, race, occupation, and income. In each state, the focus groups were organized by a different discussion group sponsor. JFF provided local discussion group sponsors with worksheets designed to help them recruit the appropriate demographic mix of focus group attendees.

Each group lasted about three hours and was led by a JFF-trained moderator. In the first half hour, focus group participants were introduced to each other and to the purpose of the focus group itself. Following introductions, participants engaged in a two hour discussion. The group discussion concluded with dinner and refreshments. The number of focus groups conducted varied somewhat by state as did recruitment methods for focus group participants. To respect the privacy of focus group participants, all participants were granted anonymity.

There are, of course, limitations to group discussions like focus groups. The research technique is qualitative. Thus, the observations detailed in this report should not be mistaken for findings from a random sample survey. They are, technically speaking, hypotheses that would need to be validated by reliable quantitative methods before being considered definitive. The observations are, however, suggestive of how residents in each state view economic and job-related issues.

Substance of the JFF Focus Group Discussions

In each state, focus group discussion centered around six inter-related issues: (1) the state's overarching character; (2) the state's economy today; (3) the state's future economy; (4) workplace terms and issues; (5) education and training; and (6) information sources. These issue areas constituted the substance of group discussion in all four states.

- *State Character.* Participants were asked to describe what makes their state unique: how do they view the state's character; what are its strengths and weaknesses; how do people in the state perceive regional boundaries, etc. This general information helped JFF understand the extent to which people in different states identify themselves with particular regions, cultural-economic or political groupings, and helped JFF develop a language with which to communicate with the natives of a state about their economic future.
- *The State's Economy Today.* Participants were asked to share their ideas about the health of the state's economy today: the types of changes that are taking place; the strengths and weaknesses of the state economy; how the economy varies by region, etc. This information helped JFF understand people's perceptions about the economy, the level of anxiety regarding economic change, and what information (if any) people need in order to be more accurately informed about economic issues.
- *The State's Future Economy.* Participants were asked to discuss their vision of the future to probe: how optimistic (or pessimistic) are people about the state's future economy; why people hold the views they do, etc. This information helped JFF understand the degree to which people are optimistic about the future as well as their apprehension about the changes taking place. It also helped JFF identify the public and private actors people believe are responsible for shaping the state's future economy.
- *Workplace Terms and Issues.* Participants were asked to respond to terms like job training, continuing education, critical thinking skills, communication skills, and teamwork. Participant responses to these terms enabled JFF to understand what these concepts mean to people (i.e. do people respond to these terms in objective or personal

terms). Participant responses also helped JFF gauge how aware people are of the need for new and different skills as dictated by broad changes occurring in the workplace.

- *Education and Training*. Participants were asked if they feel the need to think about and act on education and training. What skills do people consider most important to get and to keep good jobs? What expectations do people have about education and training at this point in their lives? Do people need more information regarding available education and training programs? This information helped JFF understand how people feel about training, who they believe needs training, and the emotional or factual obstacles that people encounter when thinking about training (e.g. training is important "but I don't need it").
- *Trusted Information Sources.* Participants were asked to identify the information sources they trust, read, and to which they respond or listen regularly. This information helped JFF identify the best vehicles for reaching the public on economic and workforce issues.

Voices of the States: A Review of the Focus Group Results

Reports on the focus group discussions were written for each state. At the core of each report is a detailed presentation of observations based on the six issue areas covered in each focus group. On the basis of these observations, JFF made a series of recommendations about how best to approach economic development and workforce preparation in each state. In addition to specific observations and recommendations, JFF discerned a consistent set of themes that characterized how residents of each state react to and think about economic development and workforce issues. While similar themes were expressed in all group discussions, the specific nature and texture of these themes varied according to each state's culture, history, and economy. The following is a brief summary of the common themes JFF found in group discussions in each state.

General Themes from the Focus Group Discussions

Taking effective, broadly-supported action on economic and job-related issues requires consideration of the general themes that characterize the way residents in each state think about economic change and workforce issues. State themes serve as a framework for deciding what type of action should be taken in a state; what sort of information residents need; and how willing residents are to act once they have information. Hence, state and regional leaders should be aware of these themes and integrate them into plans for economic development and workforce preparation.

Citizens of Indiana who call themselves *Hoosiers* are anxious about the economic changes they see taking place around them. While they are generally optimistic about the state's economic health, they have witnessed a rapid decline in manufacturing employment in recent years and fear the onslaught of service jobs. The growth of the service economy in the state is threatening to many Hoosiers. They believe service jobs are low-skill and low-wage and don't offer economic security. Many Hoosiers believe the middle class of the state is being "squeezed out" by industrial restructuring. Hoosiers recognize that the changes taking place in their economy will require workers to develop new skills but many people are resistant to the idea of change.

Coloradans are more proactive than residents of other states; they possess a clear understanding of changes in the economy and are already pushing state and regional leaders to develop plans for economic growth based on shared values of community and individual responsibility. Coloradans want control over economic growth in their communities. They are tired of large corporations that are more concerned with reaping economic benefits than developing a healthy, diversified economy with good jobs and good wages; they are tired of plans that only benefit public and private sector leaders. Coloradans want economic growth strategies developed from the "bottom-up" and Coloradans feel strongly that community leaders and residents must play a role in the planning process.

Missourians are relatively passive regarding economic and workplace changes: they recognize that changes are taking place in the economy in the abstract, but they don't have enough specific information about these changes to interpret them with regard to their own lives. As a result, Missourians don't believe they need to prepare for or act on economic and workplace changes until they are directly affected. Missourians are also particularly concerned about the mismatch between jobs and skill levels. They see workers with specific skills, such as farmers, being put out of work and settling for jobs for which they are overqualified. The mismatch can result in frustration and apathy according to Missourians. Despite these problems, Missourians are optimistic about their economic future. They are hopeful that the state will meet the economic challenges of the future successfully.

Mississippians are frustrated by historical and cultural traditions that hold back progress; they feel that complacency, racism, and self-interested local leadership inhibit the state's ability to develop its human and economic resources. Mississippians are tired of the prevailing negative attitude concerning the state and want an upbeat approach to solving problems. They believe it is time to project a positive message to themselves and to others about the state. A key element to a new positive image is debunking the "low wage myth" that has haunted the state. Mississippians don't believe that the state's economic future lies in more low-wage jobs.

Workplace and Education and Training Issues Raised at the Group Discussions

In developing education and training programs in the workplace and in the public sector, policy makers and employers need to consider the attitudes workers hold about education and training. Residents in some states are more eager to pursue further education and training than residents in others. Programs must be designed that respond to people's concerns, fears, and questions regarding the nature of new jobs and skills in their region and state.

Hoosiers generally believe that many jobs of the future will require new skills. But most Hoosiers think about education and training in instrumental terms. Most are only interested in education and training as a short-term investment; they want to see direct results related to their work. In general, Hoosiers have a positive attitude toward existing education and training programs in the state; they feel the system is working properly but that people need to be encouraged to use it. Thus, education and training need to be discussed in concrete terms in Indiana. Workers need to understand the potential benefits of education and training in terms of their own career path.

Coloradans believe their fellow workers already have good skills though they admit workers may need to improve their skills to match the jobs of the future. Many Coloradans feel there is a surplus of educated, qualified workers in the state. Like Hoosiers, Coloradans think of education and training in job specific terms. Coloradans have a positive disposition toward education and training but they want to know that it will pay off. Hence, education and training opportunities in Colorado need to be communicated in terms of jobs not in terms of abstract changes taking place in the economy.

Missourians believe that the current education system does not prepare young people to enter the workforce, but there is little consensus on what the focus of education should be. Some people feel schools should stress job-specific skills while others feel the education system should provide students with broad basic skills. Despite the lack of consensus, participants in every community automatically pointed to education when asked to offer solutions to the problems in Missouri's economy. The preponderance of low-wage, low-skill jobs in the state caused many to question how education will help young adults if there aren't enough good jobs to go around. Hence, in Missouri, a dialogue on education must be promoted so that a consensus can emerge on what needs to be done. In addition, Missourians need more information about the benefits of job-training, vocational education, adult education, and other ways to increase skills.

Mississippians believe that adults need better skills if the state is to capture or to create high-wage jobs. Many question the utility of education and training if there are not enough good jobs for those people with skills. Mississippians believe that the future economic success of the state lies in improving the education of today's children. They feel that educational progress begins when parents instill motivation in their children. Mississippians need a better understanding of the link between education and training and the creation of more and better jobs.

Sources

Jobs for Colorado's Future, *Voices Across the Rockies: Coloradans Talk About Their Economy* (prepared by Jobs for the Future, Inc.)(March 1989).

Jobs for Indiana's Future, *Voices from Across Indiana: Hoosiers Talk About Their Economy* (prepared by Jobs for the Future, Inc.)(September 1988).

Jobs for the Future, Inc.,*Voices from Across the Delta, Hills, and Coast: Mississippians Talk About Their Economy* and Future (November 1989).

Jobs for Missouri's Future, *Voices from Across the 'Show Me' State: Missourians Talk About Their Economy* (prepared by Jobs for the Future, Inc.)(October 1989).

THE JFF REGIONAL CONGRESSES

Developing Consensus Through Regional Congresses

JFF sponsored regional conferences in Colorado, Missouri, and Mississippi to solicit the informed opinions of community leaders from throughout each state on questions regarding economic change and development. In each state, regional leaders discussed a wide range of topics related to economic development from financing small business, to workforce skill levels, to the quality of public education. JFF believes that making real progress on economic and workforce development issues in a state requires input from regional leaders in business, government, education, and community organizations. Generating debate and building consensus among these sectors at both the state and regional level is critical for developing sustainable plans for action. The regional congress process was vital for developing region-wide and statewide recommendations for economic and workforce development strategies in each state. Through the regional congress process, JFF made sure that recommendations for action in each state represented the informed thinking of as many community leaders as possible.

The Congresses also established a constituency for change in each region, a critical ingredient to successful implementation of JFF recommendations. For many participants, the Congresses represented the first occasion to meet with other community leaders to discuss common problems. Through identifying and discussing economic and workforce problems, a consensus emerged in each region about what steps should be taken to solve these problems. Many participants expressed a need for an ongoing regional forum to foster continued discussion of issues raised at the Congresses and to establish plans for regular updates on the implementation process.

Based on discussion group results in each congress, Jobs for the Future developed a summary of "cross-cutting themes" for each state. These themes reflect attitudes and ideas which consistently appeared in the Congresses.

The Regional Congress Method

Regional congresses were held throughout each state between 1989 and 1990. In Colorado there were five regional congress sites; in Missouri and Mississippi, there were six regional congresses. Following JFF's recommendation, the Governor of Indiana concluded his own regular congresses after the JFF one-year program.

For all regional congresses, regions were selected by natural economic and cultural boundaries within each state. The regional congresses in each state were designed to establish communication between key sectors of the community so that a consensus could be developed among community leaders on the most critical issues facing their region. In the states where two or more rounds of meetings were held (Colorado and Mississippi), the first meeting was designed to diagnose the economic and workforce problems in their regions. The input from this first set of Congresses helped JFF gauge how aware each region of a state was of economic and workforce challenges. They also helped JFF develop a sense of the most pressing issues facing the state overall and those problems unique to particular areas.

In each state, the first regional congress session began with a brief introductory presentation to acquaint attendees with the preliminary findings of JFF on both statewide and region-specific economic and occupational trends. The attendees were then briefed on the object and methodology of the regional congresses. Following introductory remarks, attendees broke up into groups to discuss designated topics. Facilitators were assigned to each group to guide and record the discussions. Each facilitator was provided with a regional congress instruction guide prior to the Congresses. Facilitators helped participants identify the chief economic and workforce issues they faced and discuss possible solutions. At the end of two one-hour discussion sessions, participants reconvened and discussion group facilitators presented the findings and conclusions of each group to the entire congress.

The breadth of topics covered in the first round of congresses varied according to each state's prior experience in dealing with economic and workforce development issues. In Missouri, where a good deal of self-analysis along these lines had occurred, the congresses were focused specifically on workforce preparation issues. In Mississippi, where less self-evaluation has occurred, the first round of congresses covered more general economic development issues. In each state, the results of the first set of congresses served as the basis for final recommendations for regional and state action.

In the second set of regional congresses, JFF presented its final research findings and recommendations in the form of a strategic plan to congress participants. In each state, congress participants responded to and discussed JFF's findings and recommendations and considered whether JFF's recommendations accurately reflected the consensus that emerged in the first set of congresses regarding economic and workforce problems. Congress participants were then asked to develop a locally responsive action plan based on the overall state recommendations. In developing locally responsive plans, participants considered how specific policy recommendations could be implemented in their regions; what the obstacles to implementation would be; and what help the region would need from the state to carry out implementation. As with the first set of congresses, the range of topics in the second set of congresses varied by state according to the specific set of recommendations made by JFF. (In Missouri, where only one round of Regional Congresses was held, problem identification, solutions, and alternatives for action were discussed together.)

Congress Attendance

In all three states, participation in the Congresses was by invitation only. The meetings were not designed as "public forums" where the discussion would be dictated by whoever showed up and whoever managed to talk the most. Rather, the half-day sessions were composed of individuals selected for their leadership role in business, government, education, labor or community organization. Because developing consensus in each region was one of the main objectives of the congresses, the same individuals were invited to participate in both congresses.

Results From The Colorado Regional Congresses

The Colorado congresses were co-sponsored by selected regional sponsors including US West Communications, Public Service Company, and the Community College and Occupational Education System. Workshop sponsors invited participants based on their knowledge and experience of economic and workforce issues. Attendance ranged from 18 to 42 participants in each congress.

Methodology

Session One

The Colorado Congresses were tightly structured to elicit the most comprehensive view of the workforce in each region and to provide all participants a chance to voice their concerns and ideas. Participants were divided into four groups by sector: private, public, education, and non-profit. Each group worked through very specific worksheets which asked questions relating to ***the economy, the workforce, and the learning system*** of the region. The worksheets were designed for two main purposes: first, to help Jobs for Colorado's Future understand more about workforce issues in each regional economy and the resources needed to help make local workforces more competitive; and second, to help local leaders identify and analyze ways to improve and to strengthen the workforce in their area.

After each sector completed their respective worksheets, all participants reconvened. The facilitator for each sector briefly summarized the worksheet results of each sector to the entire congress.

Session Two

In the second round of Congresses, JCF presented preliminary statewide research findings and recommendations. Congress participants were divided into discussion groups that responded to the statewide recommendations and developed frameworks for local action. Participants worked through four worksheets to accomplish these two goals. The first set of worksheets, which related to statewide goals, asked participants to determine the usefulness of statewide workforce initiatives and to rank priorities. The second set of worksheets were related to local goals and asked participants to determine local priorities and develop local initiatives. (See technical assistance products section.)

After the worksheets were completed, discussion groups prioritized local initiatives by vote. After discussion group votes, the entire congress reconvened to decide which three activities the regions should pursue.

Session Three

In session three, JCF presented the findings and recommendations of *A Call to Action*, The Jobs for Colorado's Future Action Plan to congress participants who responded to the findings and recommendations and developed locally responsive action plans. Participants considered how the recommendations of the Action Plan could be implemented in their communities and what kind of help they would need for successful implementation.

Cross-Cutting Themes At The Colorado Regional Congresses

General Themes

Economic Outlook

Coloradans are concerned over the loss of middle-income jobs. As the economy continues to diverge in Colorado, the differences between those people making a good living and those struggling to survive has been exacerbated. Workshop participants believed this trend would continue without intervention.

Growth in the tourist industry and low-wage service sector place strain on community services and increase the income gap between the haves and the have-nots. Participants were skeptical of the long-term value of tourism to their communities. Because wages are low in tourism jobs and because few tourism related jobs offer benefits, the growth of these jobs means the community would have to take on the expense of services such as subsidized health care, housing, and other necessities.

Coloradans prefer a diverse industrial structure and small- to medium-size firms. Participants did not want their economies based on one or two large companies, because this dependence makes them vulnerable. However, participants that wanted to encourage small business growth wanted small businesses that provide employee benefits.

Coloradans prefer the growth of clean, light industries. Light industry—particularly manufacturing—was viewed as a stable form of economic growth. Every region was clearly concerned about the quality of the environment and said that economic development would have to meet the environmental standards of the community.

Coloradans are developing regional approaches to economic development. Representatives from all regions noted the beginning of new, regional cooperative efforts to foster economic growth in their regions.

Workforce Issues

The idea of developing a "competitive workforce" is still new to many Coloradans. While many participants had grappled with workforce issues, the majority of participants lacked a clear understanding of the demographic and training issues that many Colorado regions are facing today and will face in the future.

Colorado's workforce is bifurcated. All regions described a dichotomous labor force. One group of workers is characterized by high levels of education and training; the other with low basic skill levels in reading, writing, and mathematics.

High school graduates do not understand the requirements of the workplace. Several regions mentioned that new high school graduates did not understand the business environment. In general, participants felt that many graduates did not understand the importance of appearance, punctuality, and attendance.

Coloradans have a strong work ethic. Participants reported a stable native workforce that was very productive and dedicated. Many participants added, however, that loyalty and high productivity were lacking in low wage service sector jobs.

Coloradans work for lower wages than people in other states. Participants feel that Coloradans accept lower wages because they enjoy the lifestyle in the state and because union activity is lower than in other states. Participants viewed these attributes as strengths of the workforce.

Minorities are under-represented in the workforce. All regions reported the lack of minorities throughout the labor force. Southern Colorado reported that minorities were well represented in the public sector, however, and Northwest Colorado felt that the lack of minorities reflected the fact that fewer minorities reside in Northwest Colorado than in other parts of the state.

Women are under-represented in the workforce, particularly in management. Participants felt that women were not represented equally throughout the workforce. Lack of women at the management level was a concern ton most regions. All regions felt that women were better represented at the lower levels of the workforce and in the public sector. Several regions were also concerned that women were paid less for the same work performed by their male counterparts.

The Learning System

Coloradans feel that high school graduates lack basic skills. All regions were concerned about the lack of basic skills in high school graduates. The ability to read above the fifth grade level and perform basic math problems were of particular concern.

Coloradans are very concerned about the dropout rate. Congress participants want to put an end to high dropout rates and alienated teenagers. Suggested solutions to these related problems varied by region but early childhood prevention and mentoring were mentioned by virtually every congress.

Educators need to work more closely with members of the business community. Representatives from all regions remarked on the need for more sustained interaction between the business and education sectors. Participants felt that integrating business and education is the only way to build a workforce which will meet the needs of businesses while still delivering a wide range of educational opportunities.

Business and education partnerships will be key to meeting adult training needs in the future. While most congress participants have not precisely identified the types of partnerships that will be beneficial, there is clear sense that the role of community colleges with employers will increase in the future. Customized training is viewed as a promising solution to the rapidly changing work environment.

Rural regions are concerned about the delivery of adult education. Metropolitan regions were satisfied with the variety of adult education and training programs offered in their areas. Rural Coloradans, however, are frustrated with the lack of education delivery in their areas. Several congresses suggested telecommunications and satellite-learning as a solution to the problem, as well as the need to create other non-traditional delivery systems.

Coloradans want more information on adult learning opportunities. Participants felt that accessing appropriate adult education and training is a frustrating and confusing process. To make access to programs easier, participants suggested disseminating easy-to-understand information to all residents in Colorado about existing programs and options.

Educating the public, community leaders, and the legislature about workforce issues is the key to change. Most congress participants voiced an increased need for public education regarding workforce issues. Participants felt that more Coloradans and leaders need to know that the average person will confront five to seven career changes in their lifetime and that a high school education does not guarantee job success. Because change is becoming the standard operating procedure in the workplace, the concept of life-long learning is imperative for all Coloradans.

Results From The Missouri Regional Congresses

Methodology

The topics chosen for discussion in the Missouri congresses approached the central issue of workforce preparation from complementary perspectives. By focusing on the customers of the workforce development system, the discussion encouraged community leaders to look at the state's need to build an educated and trained workforce for the next century with new eyes.

In each of the six regional congresses, attendees participated in one of three discussion groups which addressed workforce preparation issues from a specific angle. The first group discussed workforce preparation issues from the ***employers' perspective*** considering employers' needs for skilled labor. The second group discussed workforce preparation from the ***workers' perspective*** considering how workers can obtain the education and training they need to get and keep a good job. The third group discussed workforce preparation from a ***community perspective*** considering how local labor markets and learning institutions can perform better.

In the first hour, each discussion group concentrated on identifying the major workforce issues that exist in their community. Each group listed between five and ten issues that they believed needed attention. Following initial discussion, each group prioritized issues in order of importance.

In the second hour of discussion, each group identified solutions to the most important problems. Each group was asked to consider whether solutions involved action at the state or the local level and which sector (government, business, education, labor, and community organizations) had the greatest responsibility for implementing a solution.

At the conclusion of the discussion groups, the entire group reconvened in a general session where facilitators summarized each group's priority issues and solutions.

Cross-Cutting Themes Of The Missouri Regional Congresses

General Themes

Improve access to quality work-related learning across the workforce. This goal embraces three essential components: (a) to make education and training far more *accessible* to a greater percentage of the workforce; (b) to make education at all levels more *work oriented*; and (c) to assure that the learning needs of the workforce are addressed across the full spectrum of need (i.e., to address the strong support for the concept of lifelong learning).

Assure greater coordination and communication in the planning and operation of education and training services. This notion expresses the need for education, business, and governmental sectors to work together in a fundamentally different way—in a formal, systematic collaboration better to define ways of preparing students and workers for productive careers.

Enforce far greater accountability in the provision of education and training services. Participants pointed out the need for clearly articulated, outcome-oriented performance standards for classes, courses, programs, and other commitments of resources. The flip side of the creation of standards is the provision of a system of incentives (and disincentives) for reaching them to respond to the need for greater accountability among schools and other training institutions in meeting the desired standards.

Greater customization and individualization of learning. This theme reflects the attitude that learning is a highly individual process, a fact that must be accounted for within institutions in accommodating different learning styles and the need for individualized attention. Also implicit in this vision is a recognition of the need to educate the public for the real cultural and ethnic diversity that exists in the state's population.

Challenges From The Employee's Perspective

Employees want job security. Workers seem to have an increasingly tenuous relationship with their employers and don't always understand their long-term prospects for earnings, promotions, or even keeping the job they have. This anxiety would be relieved by a clear commitment from employers to stick by their employees and help them keep up with changes in jobs through upskilling and retraining. **Solution:** Responsibility for addressing this concern lies chiefly with private sector employers, many of whom need to make a change in their corporate culture to accommodate the new labor force. Tied with this solution is the need to establish a clear system of incentives and rewards for workers who pursue work-related training.

Employees want employer and community support to meet pressing family needs. Conference participants expressed concern over adequate day care, health care, and transportation in their regions. Participants also want employers to provide workers with sufficient flexibility in work schedules and benefit packages so they can juggle their work and family needs responsibly. **Solution:** Responsibility for addressing this concern lies with both communities and employers, who need to find new and better ways of collaborating to assure the availability of basic services, child care, transportation, and health benefits.

Developing and maintaining high motivation and a strong work ethic across the labor force is viewed as a major challenge. Congress participants acknowledged that many current workers and new workers lack the motivational skills and work ethic necessary to be successful in their jobs. **Solution:** Addressing this concern, according to the Congresses, may involve reaching into schools earlier in a student's secondary education to develop stronger work values. This solution would include focusing greater education on workplace needs through more and new opportunities for cooperative learning, internships, on-the-job training, etc.

Employees want better access to information about skills and jobs. Congress participants felt that workers lacked understanding of the skills required for today's jobs. According to participants, employees don't understand how important basic skills such as reading, writing, and problem solving are in the workplace. Employees are even less cognizant of the need for new basic skills such as communication and teamwork. Participants also expressed the need for easier access to information about where job opportunities lie in each region and to the education and training resources available in each region. **Solution:** Responsibility for addressing this concern lies with both government and business. Participants recommended that the state become far more active in assembling and disseminating job information—wages, occupations, and skills needed, which in turn depends on the much greater involvement of the private sector in providing such information to the government and to intermediary institutions.

Challenges From The Employer's Perspective

Employers have difficulty finding sufficiently skilled and technically trained workers. Solution: A combination of short-term and long-term actions: first, employers as a group must begin a process of making greater investments in their existing workers, to help move workers along in skills upgrading; and second, employers and education and training institutions must begin working in fundamentally different ways in order for schools better to understand the real skill needs of businesses.

Many entry-level workers are not equipped with basic skills. Solution: Establish better communication and closer linkages between the educators and the private sector. Congress attendees recommended giving employers direct input into the development of work-oriented curricula in secondary and post-secondary institutions.

Employers want to lower turnover rates in jobs that are not glamorous. Solutions: The private sector and the community need to have a greater understanding of the kinds of work that are available. Congress attendees thought that a large percentage of younger workers and students have very unrealistic expectations of work life, which leads to anxiety and dissatisfaction with careers and personal growth. Employers need to do a better job of informing schools and the government about jobs where workers are needed, and the fact that many "non-glamour" occupations pay well and require high-tech skills.

Employers have difficulty developing and maintaining high motivation and a strong work ethic across the labor force. Congress participants taking the employers perspective described the same issues and solutions as the worker discussions concerning work ethic. Both groups agreed that many current workers and new workers lack the motivational skills and work ethic necessary to be successful in their jobs. **Solution:** Addressing this concern, according to the congresses, may involve both reaching into schools earlier in a student's secondary education to develop stronger work values and focusing greater education on workplace needs through more and newer opportunities for cooperative learning, internships, on-the-job training, etc. Employer groups also identified the need for greatly improved labor-management relations, better communication about what is expected, and empowering employees with greater autonomy in return for more accountability.

Employers are concerned about how to meet the growing cost of employee benefits. Solutions: Attendees believed that employers should play a greater financial role in the provision of benefits, but that a great deal of work needs to be done (a) to quantify the returns that devolve to a firm that makes service investments in its workers; and (b) to continue promoting the growing labor shortage, and that firms may need to offer greater benefit packages as incentives to attract workers in a labor-short environment.

Employers are concerned that public education and training is too inaccessible. Congress participants were concerned that physical and psychological obstacles to receiving training prevent workers from seeking additional training outside of work. **Solutions:** Invest in more training that is delivered to employees on-site, during work hours, and is fully integrated with the work environment.

Challenges From The Community's Perspective

Communities need more complete integration of workforce preparation issues and local economic development planning. Congress participants identified four problems facing communities: the lack of sufficiently skilled and technically trained workers; the growing lack of available high-quality jobs; the lack of information workers have about existing jobs; and the arms-length relationship between education and the private sector. **Solutions:** Develop better coordination and communication between businesses and the education sector. Specific solutions included:

- greater representation of business on planning councils of public institutions;
- greater business participation in cooperative learning, mentoring, and shadowing programs;
- better business definition of skills and jobs that are in highest demand—including the clear communication of need to the education sector; and
- business/parent/education planning groups.

Communities are not organized to identify and to address key workforce-related human service needs. Few communities, if any have a clear vision of what a fully developed human service system looks like. Participants felt that literacy training, retraining, skills assessment, job counseling, and day-care are all critical components of an ideal human service system. Communities need to develop consensus about human service needs before they can develop strategies to meet these needs. **Solution:** Attendees suggested holding a combination of community forums and new multi-sector organizations to provide analysis, planning, and leadership on workforce issues. Such efforts will necessitate strong business, worker, and parent participation.

Most communities exhibit a low degree of coordination in the planning and provision of public sector services. Solution: Local government and community-based organizations need to develop greater cross-agency planning for human services and education, including addressing transportation, day care, and health issues.

Communities are not adequately communicating the importance of education and of life-long learning. Solution: Communities need to identify and to promote of basic skills and new basic skills and to have a broader community discussion of these needs. They also need to identify role models for young people and within companies to show that working hard can pay off.

Results From The Mississippi Regional Congresses

Methodology

Session One

In Mississippi, congress attendees participated in one of four discussion groups depending on their personal preferences. The discussion groups were focused around issues of (1) workforce preparation; (2) providing public facilities and infrastructure services; (3) financing small businesses; and (4) developing technology and transferring it to the workplace. These areas were selected for discussion because they are the primary areas of concentration of the Special Task Force on Economic Development which sponsored the congresses. These issues can provide a useful framework for weighing and selecting policies that can influence economic change in ways that provide greater opportunity for the people of Mississippi.

In the first hour of discussion, each group concentrated on identifying the major issues in their designated area. Typically, ten to fifteen issues were identified by each group. These issues were then ranked in order of importance by a group vote and the five issues with the highest overall ranking were selected for further discussion.

In the second hour of discussion, groups identified solutions or recommended strategies for the most critical issues. Each group was asked to identify strategies appropriate for local or regional action as well as state action. In addition, groups were asked to decide whether these strategies could be implemented over the short-term (up to three years) or the long-term.

At the conclusion of the discussion groups, all participants reconvened in a general session where facilitators presented the conclusions of each group.

Session Two

In the second round of Congresses, members of the Special Task Force for Economic Development Planning presented their vision of economic development for Mississippi and top priority recommendations of their final report *Seizing the Future: A Commitment to Competitiveness*. congress participants responded to both the vision and the recommendations and considered how recommendations could be implemented at the local level. Discussion groups were organized around implementing the report's major objectives: developing competitive people, competitive businesses, and competitive communities. In addition, congress participants in each region established a process for regular update and improvement of strategic plans for their region.

Cross-Cutting Themes Of The Mississippi Regional Congresses

General Themes

Mississippians are eager to discuss issues of economic change. Congress participants were eager to discuss economic and workforce issues facing their communities. Participants repeatedly remarked that they need a forum like the congresses to meet and discuss their common problems. The enthusiasm of participants suggests that leaders at the state and regional levels need to organize regular forums where community representatives can engage with one another in dialogue. There is an under-utilized reservoir of concern and commitment among Mississippi's citizens.

Community leaders are concerned about the lack of economic opportunity in the state. The vast majority of congress participants were well informed about problems affecting economic growth in Mississippi. Participants were deeply concerned that the gap between economic opportunity available to residents of Mississippi versus that available to residents in other states was widening. Many participants felt that the state's failure to invest in human resources was at the core of the widening gap.

Community leaders are impatient with state leadership. Community leaders displayed a fairly sophisticated understanding of the economic changes facing the state. In fact, community leaders appear to be well ahead of their counterparts at the state level in terms of their desire for change and their understanding of what changes are necessary. Community leaders expressed frustration in state leaders' ability to achieve political consensus and political will around issues of economic change and workforce development.

Lack of leadership is a pressing issue for Mississippi. At every congress and in almost every discussion group, the conversation seemed to turn almost invariably to the subject of leadership development. There is a strong sense that state and local organizations need to place more attention on programs and policies that promote leadership development. Participants agreed that public and private sector employers and educational institutions all need to provide more opportunity for individuals to develop leadership skills.

Mississippians view regional cooperation as pivotal to developing solutions to common problems. At discussion groups at every congress there was discussion of the appropriateness of regional cooperation to pursue solutions to common problems. The importance of regional mechanisms was especially strong in the discussions of infrastructure and business assistance programs. It was also raised in discussions on education, worker training, technology transfer and applied research.

Congress participants want to turn the state's low self-esteem into self-reliance. As one participant noted, Mississippi is afflicted by a collective "welfare mentality" that permeates both people and institutions. At the individual level, participants recognized a strong reliance on local and state government for special favors or economic support. At the state level, participants recognized an over-reliance on outside institutions such as the federal government or the Tennessee Valley Authority for both program initiatives and financial support. Even within economic development circles, participants noted the historic emphasis on recruiting plants from other states rather than strengthening existing companies. Participants want to develop a new vision for Mississippi based on self-reliance. The notion of self-esteem leading to self-help resonated through discussion at almost every congress.

Leaders acknowledge that racial divisions are hampering economic development in Mississippi. In virtually every congress there was frank discussion of racial divisions in Mississippi. Many participants felt that Mississippi had come a long way in developing racial harmony but the majority felt that Mississippi has a long way to go. Most participants agreed that the deep poverty of Mississippi's black population constitutes a fundamental barrier to economic opportunity for all people in Mississippi. While the welfare costs alone are staggering, most participants were more concerned with the loss of human potential and the continued erosion of Mississippi's level of workforce preparation than with the fiscal burden.

Preparing The Workforce For Tomorrow's Jobs

There is an urgent need to improve the quality of basic education in the schools. Most participants feared that young people graduating from high school lacked basic skills such as reading, writing, math, problem solving, decision-making, leadership, and creativity skills. There was a general sense that the public education process should be made more rigorous and more demanding in what it expects from students. Solution: Emphasize cultural education as part of the core curriculum in the public schools and implement higher standards of accountability for teachers, students, parents, and administrators.

The lack of an educated adult workforce is viewed as a major drag on development. The discussion groups called for new approaches to adult education and worker training. The importance of literacy education efforts among the current work force was stressed. Solution: Aggressive promotion of continuing education and establishment of incentives to employees and employers for higher skill development in the workplace.

The self-esteem of students must be improved through effective counseling and support programs.. Participants expressed concern that the low self-esteem of "at risk" young people inhibits their ability to learn in school. Solution: Increase early childhood intervention and education program efforts for the "at risk" population.

More effective public education requires involvement of businesses, communities, and parents. At every congress there was discussion of the need to improve and expand involvement in public education. There was particular concern about how to increase parent involvement in education. Solution: More parent-teacher contact and increased employer participation in schools through mentoring, tutoring, and cooperative education.

Providing Public Facilities and Infrastructure Services

Lack of revenue to support state and local infrastructure needs is a large concern in Mississippi. Many participants saw the need to find new sources of revenue to support the infrastructure burden, especially at the local level. There was little enthusiasm for increasing general revenue tax rates, however. Inequities in revenues between richer and poorer counties and between rural and urban counties were also an area of concern. **Solution:** Aggressive application of user charges and pay-as-you-use financing schemes.

Solid waste disposal is a major environmental concern. Many congress participants expressed concern about the solid waste disposal problem in the state. Several attendees predicted the emergence of a solid waste crisis with existing landfills reaching capacity. There was also considerable concern about hazardous and toxic waste disposal. **Solution:** Regional cooperation and more aggressive recycling programs.

Water availability and water quality are large concerns. **Solution:** Review of current regulations governing water use; development by state and regional authorities of a long-term water resources plan; and a state mandated water conservation plan.

Financing Small Business

The state needs to improve the way it markets and administers existing programs. At every congress, private sector representatives stressed the need for the state to improve its marketing and communication about existing programs. Private sector participants stressed that banks and small businesses are unaware of the financing help that is available. Concern about "red-tape" and over-centralization of state financing efforts was also expressed. **Solution:** Develop materials to explain programs to applicants; revise and simplify application procedures; get banks more directly involved in the administration of programs; adopt rigorous standards of accountability and integrity; employ more experienced financial experts.

There is a need for more risk-oriented financing including equity capital. Congress participants identified a need for more risk-oriented financing in the small business sector, particularly manufacturing. The most cited needs related to equity capital for growth-oriented small companies. **Solution:** Establishment of venture capital programs with special emphasis on early stage seed financing and more creative use of the loan guarantee authority of the state.

Technology Transfer

Manpower limits are the greatest obstacle to technology development and transfer in Mississippi. Almost all participants agreed that the low quality of public education has contributed to severe shortcomings in the technical proficiencies of existing workers. There was a consensus that poor public education threatens to retard future growth in this area by failing to prepare future job entrants with solid basic skills. Participants also felt that more education and training must go to adults already in the workforce. **Solution:** More resources for math and science education; more cooperative work-study programs and better communication between business, educators, parents, and students about the need for stronger skills in the workplace; and establishment of incentives in the workplace for existing employees to upgrade their skills.

Existing technology transfer mechanisms are not doing a good job of marketing their services to small businesses. Participants agreed that current technology transfer mechanisms (community colleges, the Department of Economic Development, universities etc.) are not well-coordinated and probably need additional resources to do their job properly. Participants felt universities should strengthen their research and development capacity and focus more directly on applied research which responds to market needs. **Solution:** Establishment of state-supported, decentralized delivery system that concentrates on manufacturing and agribusiness. System should emphasize programs to help small companies understand what kind of technology would be appropriate for their industry. System should also provide information about where help in adopting appropriate technology can be obtained.

Sources

Jobs for Missouri's Future, *Report on the Missouri Regional Congresses for Workforce Preparation* (prepared by Jobs for the Future, Inc.)(August 1990).

Jobs for the Future,Inc., *Report on the Mississippi Regional Congresses for Workforce Preparation* (prepared by Jobs for the Future, Inc.)(January 1991).

A STATE AGENDA FOR THE NINETIES

The need to change is clear.

The 'system' must also change in response to the new realities described in this document. The key to our national progress, everyone has agreed, is education and training; but now this must be reformulated to meet the new demands of a different workplace. If we are to advance as a nation, high-skill, high-wage careers must be within the reach of all. All Americans, whatever their background are entitled to the prospect of a future unfettered by the poverty or deprivation they experienced as children. Translating the appeal of that vision into the stuff of everyday life is this country's enduring economic challenge.

It has become abundantly clear that America is at risk if it simply accepts the underlying economic and occupational changes that are shaping the future. American companies are losing the chance to grow not just because of inadequate worker skills but because of their inadequate investment in improving skills. Many communities, many companies, and key state leaders still need to be convinced that education and skill improvement is *the* key to economic growth. But no major sector of society is investing adequately in helping people work smarter. Many in government and the private sector—by inclination, reflex or force of habit—still hope to get by with business as usual.

We see the need for a new paradigm for economic development that actively promotes education and the polishing of workplace skills. It must realize that high-skilled jobs are the dividends paid to investments in people. It must reflect local needs and draw on local strengths. It must bring public and private sectors together into a common enterprise to build a better future. Above all, it must be designed to keep the jobs that we have today while creating better ones for tomorrow. Once developed, this paradigm, this new agenda for economic development, needs to be promoted on a vast scale.

A New Agenda

A new agenda for the nineties has to be based on the economic realities in which we find ourselves today. The agenda must be grounded in ambitious principles designed to point youth, our workers, and our communities toward a different future. Its fundamental premise must be that individuals in the United States have the right to create their own futures. Any economic development plan not organized to transform that truth into operating reality is seriously flawed.

Objectives

1. Economic Development Depends on Human Development

This first principle is the foundation of the new agenda for the nineties and beyond. Adherence to this fundamental belief must become second nature to state and local officials interested in economic development. They must come to understand that economic development is not bricks and mortar, not fancy new technology or even trendy new management styles. Economic development starts and finishes with the people in the community.

To be improved, human investments must be seen as developing and maintaining an integrated system for learning, not as disaggregated pieces—public and private, elementary or secondary education, and higher education. States and communities must broaden their views of what needs attention and, in doing so, expand their notions of integrated workforce development systems.

It is important to know how well schools are doing. But if 70 or 80 percent of a state's future workforce is already on the job—and if 60 to 70 percent of the state's high school graduates are migrating elsewhere in search of employment—then it is also important to know how well the adult education and training system is doing.

More than anything else, states need to begin seeing adults as a basic resource. The traditional view of pouring more funding into existing educational institutions does not serve well the reality that a state's future will depend on those who are adult workers today. In response, states, businesses, and education institutions must begin to use the workplace as a learning place, to deliver learning where the people are.

2. Emphasize Lifelong Learning

One key to future success will be the development of public and private sector partnerships with a broader view of necessary human investments. Most states invest a majority of their education funding in traditional schools and institutions of higher education.

Schools and colleges are important. But other needs are also important to economic competitiveness. The targets of these other investments are the people outside of the K-12 range, outside of the colleges and universities: those in early childhood, those who need to learn in the workplace, and older workers who are in need of retraining. Responding to these needs can pay tremendous economic and human dividends.

States need to have a system of lifelong learning—a system of education that meets the needs of individuals and workers from cradle to grave, a seamless web from the perspective of the user that allows learners to move in and out easily as their education and training needs change.

States need to refocus educational systems to engage the majority of the workforce, present and future. Today, the 50 percent of our students who are not college bound have very few credible options to develop the skills that technologically-minded employers need. Our system largely abandons drop-outs; it offers little in the way of an integrated approach to the transition between school and work; it reaches adult workers in a limited, haphazard way. As a result, we find, many companies do not use or trust public institutions to help their workers.

Recommendations

With these principles as a guide, outlined below are nine major recommendations toward which state economic policy in the nineties should be directed.

1. Develop an Integrated, Market-Driven System of Lifelong Learning

States need to undertake a variety of initiatives to make education and training more accountable, more able to provide a closely integrated lifetime of skill enhancement, and more sensitive to the needs of employers and workers.

These would include such actions as:

- Strategic planning for education and training at both the state and the job-market level;
- Better articulating the transitions from high school to work and from high school to higher education;
- Credentialling the learning that takes place outside of the school system;
- Development of an aggressive public strategy to bring the private sector into the market, demanding more of public institutions through consortia, financial incentives, and public-private partnerships; and
- Development of an aggressive public-education campaign, with public and private leaders explaining and demonstrating how education and skill enhancement leads to better jobs.

2. Develop A System That Makes Existing Institutions Accountable To Serve Workforce Needs

It is time to introduce the principle of accountability to the workforce preparation system. Among education and training institutions and public job training programs, it is virtually impossible to measure what we get for what we spend. Public education budgets reward process but not performance; *i.e.*, they pay for enrollments but not for learning or skills acquisition. There is no 'consumer information' for employers or employees by which to compare the performance of institutions and programs.

Further, the educational and training resources available are diverse, apparently unrelated, and confusing. Many people and companies become frustrated by the complexity of the system and abandon public education or turn to private sources for help.

There is an urgent need for:

- State and local clearinghouses or information systems capable of providing uniform, usable information about economic change, skill needs, job opportunities, and training requirements at the labor-market level;
- Providing information to small business owners about literacy resources and other training programs available to their employees through the local education and training system;
- Development of common measures of performance for institutions, and the establishment of sanctions for non-performing institutions and programs; and
- Making performance information for education and training providers accessible to employers and workers.

3. Encourage Work-Based Adult Training

Many companies have taken pioneering steps to invest in their people to achieve continuous improvement. Several action steps suggest themselves as ways to cash in on the tremendous opportunities for accelerating the amount and quality of work-based learning:

- Secure the commitment of top management, making training part of the company's plan;
- Find ways that allow the private sector, as the chief beneficiary of new training arrangements, to pay most of the cost of the training, using public investments strategically as 'leveraging incentives' like tax credits and loan pools;
- Develop the ability of public sector institutions to train at the worksite during working hours;
- Keep education closely linked to work tasks;
- Design and encourage training for front-line workers, not just for management and professionals;
- Ensure that training is continuous, not just a one-time affair;
- Encourage companies to demand more of local educational institutions; and
- Offer incentives for the development of small-business consortia.

4. Improve the Transition from High School to High Skill Careers

Our research convinces us that communities and states cannot effectively pursue new human resource investments without addressing the needs of the 'forgotten half,' those high school youngsters who are not planning on attending college. States and private companies must achieve a closer integration of school and work, between academic and occupational learning, and between classroom and work-based learning. One promising model is the creation of structured work-based learning opportunities for young people beginning with their last years of high school and extending through the first two post-secondary education years.

Such programs should seek to build on the best practices of our European and Asian competitors who have well-developed career ladders. Yet they must also provide the flexibility and personal incentives that American students demand. A youth initiative provides an easily understood means to transform the learning system radically, motivating young people and linking them to employers and higher-education opportunities. It also ensures that technical training will enjoy the same prestige as college-track schooling and offer the same opportunities and rewards.

These school-*and*-work transitional programs should seek to do the following:

- Arrange employment opportunities in key local industries with complementary in-school learning;
- Provide credit and credentials for work-based learning;
- Ensure that students in technical areas are prepared for advancement toward higher education if they so choose;
- Encourage achievement early in high school; and
- Enhance the status of vocational-technical schooling.

5. Close the Emerging Skills Gap

One of the most significant economic realities in any community is generally not well understood or acknowledged. It is the existing gap between the skills businesses need and the skills available in the workforce. It is an inherently moving target, with skill demands changing with the advent of new technologies, new markets, new products, and new ways to organize work within a firm.

This gap is never fully identified in any standard economic and employment data. The gap is usually only clear in hindsight, meaning that policymakers end up responding to skill needs as they were and not as they are today or will be in the near future.

Awareness of such a hidden skills gap gives policymakers a leg up in constructing a new education and training agenda. It calls for a detailed examination of private sector skill needs in light of what the public sector is providing. It calls for new relationships between the private sector and public education and training institutions and programs. It calls for new ways of helping workers understand the role of an objective skill assessment in helping shape an education plan to achieve economic security.

By defining what is needed in the workplace and what is being provided by public and private trainers, analyses of the 'skills gap' galvanizes employer interest in issues of human resource development. It is a critical first step toward developing and maintaining the kind of skilled workforce a community needs if it is to meet competitive challenges at home and abroad.

6. Involve Citizens in the Debate over Solutions

At each stage of its development the United States has placed its faith in the inherent good sense of the average citizen. The problems of maintaining economic growth and standards of living for this generation and the next are a central concern today of the average citizen. They are entitled to inform the thinking of local and state leaders on these matters. Even more significant, local and state leaders need to understand public thinking on these issues as well as how citizens can be involved in charting a course ahead.

Involving everyone in the process permits policymakers to emphasize that everyone has a stake in the *outcome* as well as a responsibility for making the desired outcome real. This presupposes building a constituency for change at the grass-roots level, using the language and understanding of citizens to pave the way for the change process. People must understand what is happening in their economy and they must understand that they alone can create the necessary improvements.

Lasting and effective change requires strong 'bottom-up' pressure, but it also needs visionary leadership to pull the process along. State leaders need a broad base of support if they are to help change American life, and the people at large need a challenging vision of what they can accomplish.

7. View Workforce Issues Through the Lens of Substate Regional Economies

Workforce skills must be understood and met in the context of operating labor markets, not in the context of theory or statewide data. Our examinations of regional information in each state convinces us that policy-making has to be sensitive to dramatic substate and regional variations. Policy developed for Colorado's urban and suburban Front Range will have little relevance on the Western Slope; initiatives developed to respond to the needs of St. Louis almost certainly will not work in southwestern Missouri. Concepts applicable to rural Indiana and its comparatively healthy small towns cannot be transplanted to rural Mississippi, which has a far different set of needs.

Effective strategies must include:

- Development of a local capacity for economic development and workforce preparation;
- Creating new community and regional forums for strategic planning of human investment and workforce preparation decisions, and for coordinating institutions and resources; and
- Designing programs that are managed locally and not by statewide bureaucrats.

Job-training strategies in particular must be geared to the realities of the local labor market. Essential to this is the creation of flexible funding and innovative programs to shift attention to the differing needs of states, regions, and communities.

To be fully effective, this 'localization' of resources and control must be accompanied by strategies that require participation by the users of the programs—by individuals, local businesses, and by communities.

In other words, in this new conception of government, public investments must be structured to leverage private investments. Rather than a system of entitlements or local aid, they must become a bridge to self-sufficiency and responsible initiative. The message should be that "we will invest in you if you will invest in yourself."

8. Build the Demand for Higher Skills

Many of the other recommendations that appear in this report focus on ways to build a structure to develop higher skills within the workforce. States must also give a high priority to building the demand for higher skills within their state economy, as well. Put another way, states must give the highest priority of their economic development to modernizing the existing industrial base.

Many companies around the country have shown that they can restructure themselves into high-performance organizations capable of competing on a global scale. These businesses combine the latest in production technologies with innovations to make the highest quality goods and services. The strategies to accomplish this all emphasize quality and the continuous improvement of worker productivity.

The strongest demand for new and higher-order skills come from these companies. But comparatively few businesses have even attempted to adopt a high-performance profile. State economic development in the nineties must help build demand for higher skills by encouraging more existing industries to adopt a high-performance posture. States can:

- Assure that they have technology transfer programs in place that help small and medium-sized companies gain access to available production technologies;
- Encourage groups of companies—business or trade associations, or several companies located within a single community—to work together to identify and solve common workforce needs;
- Make sure that all state business development programs incorporate a component for human resource development; and
- Encourage larger companies to promote technology assessment, management assistance, and training along supplier networks (larger companies have the internal resources that their smaller suppliers lack).

9. Attack Workforce Challenges on a Scale Large Enough to Make a Difference

Most state interventions, whether job-training programs or manufacturing modernization, affect only the smallest tip of an enormous iceberg.

The public sector can undertake a variety of strategies to leverage significant or dominant investment and ownership in training from the private sector. Many kinds of initiatives can reach and involve large numbers of people if they are created, funded, and owned largely by the private sector. Small-business training consortia, apprenticeship programs, drop-out prevention, modernization efforts, and many other effective programs can be convened by state leaders and encouraged by the strategic use of incentives.

A critical component of this effort is the need to confront the misplaced notion that workers who need retraining are somehow 'failures.' The private sector can be the public sector's most effective representative on this issue arguing that training—by adding to skills—adds to workers' income, their value in the company, and their importance to the community.

A New Policy Process for the New Agenda

Assuring progress in responding to economic transition on the scale that is clearly needed suggests that states undertake a new public policy process. Three realities are clear. First, achieving the new agenda will be accomplished, in part, within the context of the existing political climate. Traditional political debate over goals, over the allocation and investment of scarce resources will continue. The situation in the states today is one where extraordinary pressure exists to meet short term needs with fewer resources. It is not a climate that encourages significant innovation.

Second, solutions will require an unprecedented degree of collaboration between sectors—between business and labor, government and the private sector, and between state and local agencies. For example, business, labor, and education should all work together to prepare an integrated curriculum for new youth transition programs. Without formal collaboration, the goals of learning at, and for, the workplace will not be met.

Finally, implementation that involves maintaining alliances and relationships among groups with fundamentally different political imperatives—management and labor, corporations and small business owners, the profit and non-profit worlds, traditional educators and adult trainers—over the long-term. There are no quick fixes. States can no longer hope that limited action at the margin of public policy will have the desired effect. New structures must be created both to institutionalize the ability to respond quickly to constantly changing conditions and to remind the diverse actors of their common stake in success.

These are the new rules that states should follow in defining the process to accommodate change:

- **Take the long term view.** Economic transition creates challenges without regard to the terms of office of state leaders or the budget and legislative cycles. States should seek to institutionalize a process that is able to withstand changes in political administration and avoid getting caught up in biennial debates over funding based on changes in the state's fiscal position.

- **Keep an open door—admit into the policy debate a wide variety of sectors and interest groups.** Advisory boards should be comprised of leaders from business, labor, education, community organizations, and state government. They should also include key representatives across several state agencies as well as the state legislature, and attempt to balance state-level with local-level leadership, including private citizens.
- **Nurture new relationships.** These advisory groups offer a way for leadership from different sectors to work together on common issues. They should use their power to build new and permanent collaborations that are part of a more effective multi-sector approach to public policy.
- **Give the process high visibility within the state.** In almost every case, appointments to multi-sector advisory groups should be made by the governor of the state, who should demand a clear set of recommendations for action. Regional meetings, citizens meetings, media publicity, and other techniques should be used to build awareness of and support for new policy initiatives.
- **Inform the 'process' with appropriate strategic information and choices.** This report points out the need for states to collect and synthesize new kinds of information that is not otherwise easily available. This includes diagnostic information about the nature of economic change and the skills implications. It means knowing a lot more about the outcomes of investments that the state already makes in a variety of programs and institutions. And it means sharing success stories from elsewhere in the state and the nation that may have applicability in the local setting.
- **Make participants feel responsible for implementation.** The action plan that results from the policy debate will challenge every sector to behave in new and different ways. Participants in the policy process must include leaders from a range of groups willing to commit themselves to promoting the new action plan among their constituents.

A Better Tomorrow

These are trying times for the American worker. Foreign competition and wrenching economic change in the 1980s promise to accelerate in the 1990s as Europe prepares to unite, newly industrialized countries continue to advance, and energy costs threaten to rise.

Now our resilience is being tested anew. But Americans have always known how to stop, how to change directions, and how to channel their energies into productive new directions. We must do so again.

It is time state leaders stopped and framed the need for change in their communities in compelling new ways. Our research indicates that the public will respond—that the public is, indeed, eager for an authentic restatement of traditional American values in the context of the economic demands of today.

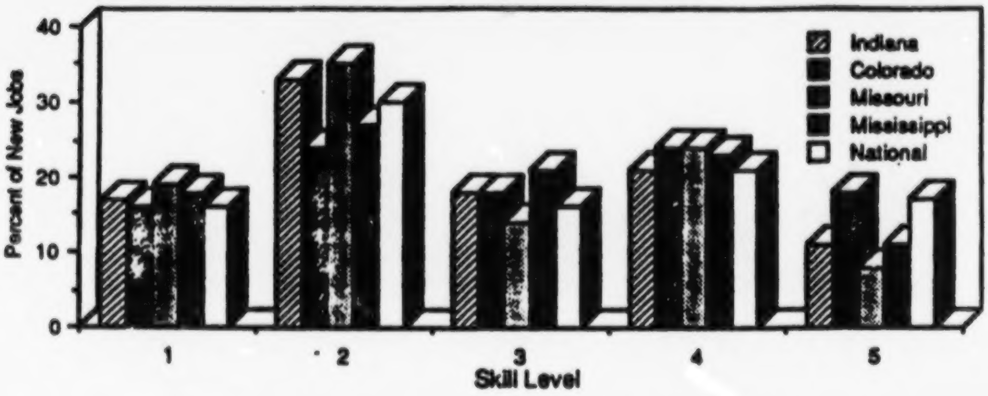
It is also time we changed direction. We must stop thinking of employment and training issues as isolated components of the nation's economic dilemma and come to understand them as part of a comprehensive whole. The traditional approach to dealing with social problems in the United States has tended to be fragmented and piecemeal. It has left behind a legacy of disjointed, if well-intentioned, programs. If we are to clearly gauge priorities and understand interconnections among different pieces of the economic development puzzle, communities must integrate individual views, business impressions, and public data into a unified whole.

Such integration, of course, is precisely the responsibility of leadership in a free society. It is the most difficult—and therefore the most important—task facing those who would channel public energies into productive new directions.

Appendix

OCCUPATIONAL SKILL PROFILES

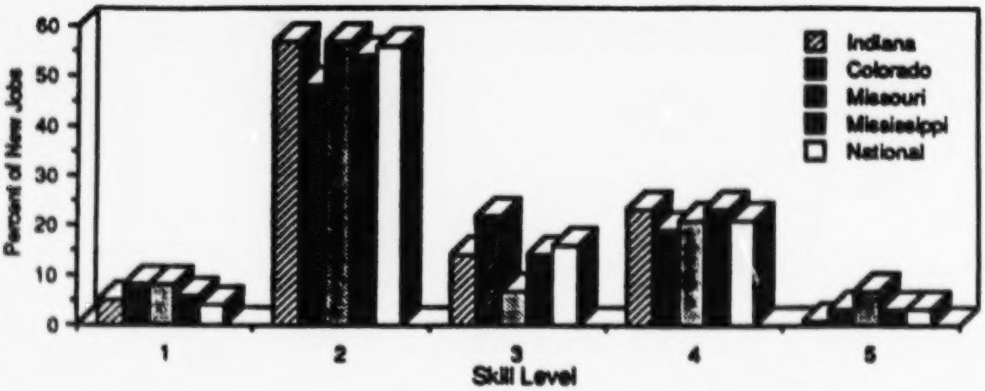
New Jobs by Cognitive Skill Level



Skill Level	Level 1	Level 2	Level 3	Level 4	Level 5
Skill Description	Rote Memory	Diagnostic use of concepts (application and interpretation)	Diagnostic use of concepts (application and interpretation requiring perception of causality)	Systematic thinking (perception of multiple causal relationships)	Synthetic reasoning (concept formation through pattern recognition)
	Occupations				
Sample Occupations	Office Machine/ Computer Operators Metal Working Operatives Cleaning Service Workers Other Service Workers Laborers	Sales Clerks Secretaries Food Service Workers Transportation Equipment Operators	Science Technicians LPNs Accountants Sales Reps Metal Craft Workers Printing Crafts TCPU Crafts Other Craft Workers	Nurses Medical Workers Lawyers Sales Managers Insurance Sales Construction Trades Blue Collar Supervisors	Engineers Scientists Physicians Writers & Artists Computer Specialists Other Professional Workers

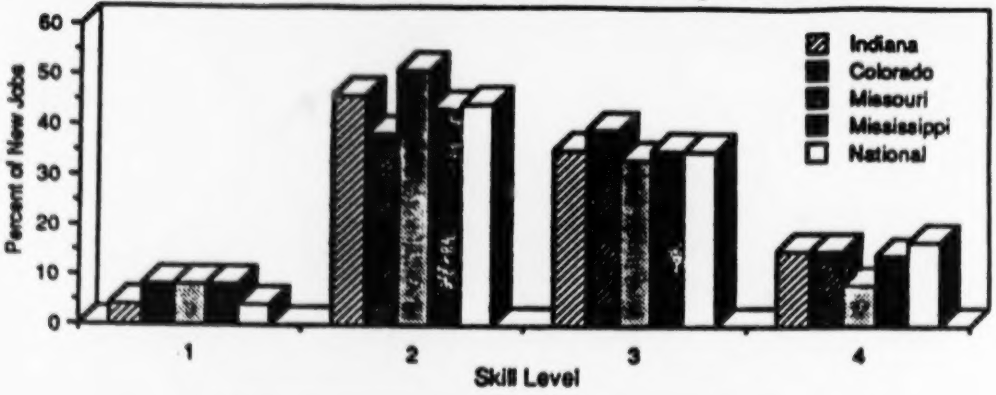
Source: JFF Analysis of U.S. Bureau of Labor Statistics and SOICC data.

New Job Growth by Psychomotor Skill Level



Skill Level	1	2	3	4	5
Skill Description	Perform bulk movement of goods	Manipulate goods (eye-hand coordination)	Manipulate goods (eye-hand coordination under time pressure)	Precision manipulation of goods or monitoring several physical events or several coordinated precision movements under time pressure	Precision manipulation of goods (under time pressure and responding to unpredicted situations)
	Occupations				
Sample Occupations	Cleaning Service Workers Laborers	Computer Specialists Social Scientists Lawyers Accountants Sales Managers Insurance Agents Technical Sales Representatives Blue Collar Supervisors Food Service Workers	Engineers Secretaries Office Machine Operators Metal-Working Operatives Other Operatives	Scientists Science Technicians Nurses LPNs Health Technicians Writers/ Artists Construction Trades Printing Crafts TCPU Crafts Mechanics	Physicians Medical Workers Metal Crafts Other Craft Workers

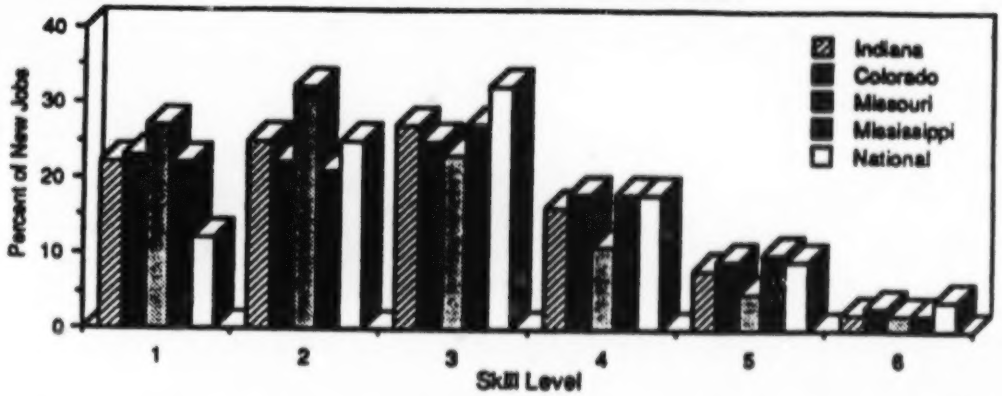
Source: JFF Analysis of U.S. Bureau of Labor Statistics and SOICC data.


New Jobs by Factual Knowledge Skill Level

Skill Level	Level 1	Level 2	Level 3	Level 4
Skill Description	No particular factual knowledge required	Some specialized knowledge in a particular field	In-depth knowledge in a field or a body of information	In-depth knowledge in several fields of bodies of information
	Occupations			
Sample Occupations	Cleaning Service Workers Laborers	LPN's Sales Clerks Secretaries Office Machine Workers Other Clerical Workers Metal Working Operators Other Operators Food Service Workers Health Workers Personal Workers	Science Technicians Medical Workers Health Technicians Computer Specialists Writers/ Artists Accountants Sales Managers Insurance Sales Technical Sales Reps Blue Collar Supervisors	Engineers Scientists Physicians Social Scientists Lawyers Other Managers & Officials

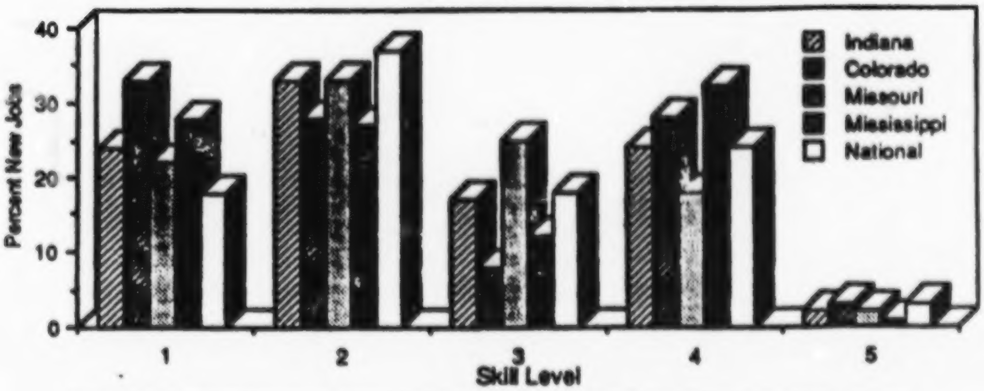
Source: JFF Analysis of U.S. Bureau of Labor Statistics and SOICC data.

New Jobs by Motivational Skill Level



Skill Level	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Skill Description	Security (subsistance money)	Affiliation (desire to be/ work/interact with others on other than task-related matters)	Precision (desire to be accurate, attention to detail)	Integration (desire to coordinate/ orchestrate the work of others)	Entrepreneurial pursuits (desire to do new and innovative things)	Influence (desire to lead, inspire others to do things)
	Occupations					
Sample Occupations	Sales clerks Office Machine Operators Metal Working Operators Cleaning Service Workers Laborers	LPNs Other Clerical Workers Food Service Workers Health Service Workers Personal Service Workers	Engineers Scientists Science Technicians Nurses Physicians Medical Workers Computer Specialists Lawyers Accountants Construction Trades Metal Crafts Workers Mechanics Printing Crafts	Other Professional and Technical Workers Blue Collar Supervisors Other Managers and Officials	Insurance Sales Agents Sales Reps Other Sales Workers	Social Scientists Writers & Artists Sales Managers Administrators Inspectors

Source: JFF Analysis of U.S. Bureau of Labor Statistics and SOICC data.


New Jobs by Interpersonal Skill Level

Skill Level	Level 1	Level 2	Level 3	Level 4	Level 5
Skill Description	Works alone	Works with others on tasks	Works with others (influencing individuals to do something)	Works with others (influencing strangers or influencing a group in an established pattern)	Works with others (influencing a group of people as a whole)
	Occupations				
Sample Occupations	Office Machine/ Computer Operators Metal crafts Mechanics Printing crafts Other crafts Metal Working Operatives Cleaning Service Workers Other Service Workers Laborers		Physicians Medical Workers Social Scientists Accountants Sales clerks Health Service Workers	Nurses LPNs Lawyers Sales Managers Insurance Sales Sales Reps Other Sales Workers Blue Collar Supervisors	Writers & Artists Administrators Inspectors

Source: JFF Analysis of U.S. Bureau of Labor Statistics and SOICC data.

PUBLICATIONS ORDER FORM

Jobs for the Future • Publications and Papers	**Quantity**	**Cost**
JFF STATE REPORTS, $10.00 EACH:		
Colorado: ***A Call to Action*** **(final report—Jobs for Colorado's Future program)**		
Indiana: ***Executive Report of the Jobs for Indiana's Future Program***		
Mississippi:		
• ***Seizing the Future: A Commitment to Competitiveness*** **(final report of the Mississippi Special Task Force on Economic Development Planning)**		
• ***Globally Competitive People*** **(report to the Human Resource Committee, Mississippi Special Task Force on Economic Development Planning)**		
Missouri: ***The Missouri Challenge*** **(final report—Jobs for Missouri's Future program)**		
JFF TECHNICAL ASSISTANCE PRODUCTS, $5.00 EACH		
USING INFORMATION IN NEW WAYS		
○ *Human Investment in Missouri* (interim report from Jobs for Missouri's Future)		
○ *Putting It All Together: The Capacity for Growth in Multi-County Regions of Mississippi*, Mississippi Special Task Force on Economic Development Planning		
ASSESSING EMPLOYER PRACTICES AND NEEDS		
○ *Education and Training in the Colorado Economy*		
○ *Education and Training in the Indiana Economy*		
○ *Education and Training in the Missouri Economy*		
○ *Report on the Mississippi Employer Survey*		
○ Employer Field Work Interview Guide, Jobs for Missouri's Future		
CREATING REGIONAL AND COMMUNITY FORUMS		
○ *Developing A Competitive Workforce in Colorado* (a community workbook)		
○ *Regional Congress Discussion Guide*, Jobs for Missouri's Future		
○ *Report on the Missouri Regional Congresses for Workforce Preparation*		
○ *Report on the Mississippi Regional Congresses for Workforce Preparation*		
EDUCATING THE PUBLIC		
○ *Voices Across the Rockies: Coloradans Talk About Their Economy*		
○ *Voices from Across Indiana: Hoosiers Talk About Their Economy*		
○ *Voices from Across the 'Show Me' State: Missourians Talk About Their Economy*		
○ *Voices from Across the Delta, Hills, and Coast: Mississippians Talk About Their Economy and Future*		
○ *Attitudes & Obstacles Concerning Work-Related Learning: Colorado Worker Survey*		
○ *Attitudes & Obstacles Concerning Work-Related Learning: Missouri Worker Survey*		
○ Color xerox of GamePlan®, a career opportunity learning game		

* * *

- Please complete this form and send it to:

  Jobs for the Future, Inc.
  48 Grove Street
  Somerville, Massachusetts 02144

- All orders must be accompanied by payment. Please make check payable to Jobs for the Future, Inc.
- If you are ordering three or more items, please add $3.50 for shipping.
- Total amount enclosed: ____________

Name: ____________

Title: ____________

Organization: ____________

Address: ____________

City and State: ____________ Zip: ____________

Telephone: ____________